

Railway Age

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Knowing How to Express Oneself

A FEW weeks ago a young man, a general foreman in the maintenance of way department of the Erie, made an excellent 12-minute address in the large auditorium of the Engineering Societies Building in New York before the New York Railroad Club. It was his first visit to the great metropolis; the first time that he had ever attempted to speak before so large or formidable an audience. Nevertheless he expressed himself clearly, without signs of nervousness, and his remarks were very much to the point. A year ago he would never have thought of doing such a thing; would not have dared to face such an audience—much less attempt to speak to it. He made this statement in his address: "Another reason that many young men do not express themselves more freely is that they do not know how, and if they do, often make the wrong impression. I was much this way. I was afraid to talk to any of my superiors. If the division superintendent came where I was working my tongue refused to function. If he asked me any questions about my work I could not answer with any degree of intelligence." What gave him the necessary confidence and ability to express himself at the New York meeting? How great an asset is it to a foreman or officer to be able to do this? In the first place, when Mr. Holland was transferred to Buffalo he joined the Central Railway Club, thus giving him the opportunity of meeting other officers and foremen and getting a broader conception and knowledge of railroading. In the second place he was made a member of the Erie Literary Club, the object of which, through prepared talks, extemporaneous addresses, dialogs and debates, is to train its members in public speaking and salesmanship. Surely this ability will prove a great asset to any man in a supervisory position. Moreover, in these days it is becoming more and more necessary for railroad supervisors to be able to express themselves clearly before both public audiences and groups of employees.

Front End Needs Watching

IN studying the arrangement of draft appliances in the locomotive smokebox or front-end, the danger is always that too little rather than too much attention will be given this detail. The exhaust pipe base and nozzle, bridge and petticoat pipe (if any) and smoke stack are relatively insignificant parts of the locomotive, so far as cost goes. Yet they have a profound effect on fuel performance of the locomotive and its ability to make steam. In fact, without proper attention to the correct proportioning of front-end draft appliances and their relation to each other, the savings made possible by modern locomotive design and the incorporation of various auxiliary devices to save fuel may be completely nullified. The vital influence of the front-end arrangement on the steaming ability of the locomotive was shown in a striking manner by tests of Missouri Pacific three-cylinder Mikado

locomotive 1699 at the Altoona test plant, described in the *Railway Age* of June 27, page 1623. A maximum evaporation of 59,000 lb. of water an hour was anticipated from this locomotive. At 160 r.p.m., 50 per cent cut-off, and with a wide open throttle, only 48,000 lb. of water an hour was evaporated, or almost 19 per cent less than anticipated. The exhaust nozzle was increased from 6 $\frac{1}{4}$ in. to 6 $\frac{1}{2}$ in., and an extension fitted to the lower end of the smoke stack without effecting any improvement. A standard Pennsylvania L1s stack, which is 17 in. in diameter at the base and tapers uniformly to 24 in. in diameter at the top, was then applied, and the evaporation dropped to 46,440 lb. an hour. The exhaust nozzle was increased to 7 in. in diameter, the basket bridge retained and an evaporation of 55,000 lb. an hour resulted. The replacement of the basket bridge by Goodfellow projections added to the 7-in. nozzle enabled an evaporation of 59,900 lb. an hour and later of 61,680 lb. to be obtained, the latter figure corresponding to 12.6 lb. per sq. ft. of heating surface per hour. Front-end draft arrangements exert a marked effect on railroad operating costs. The best arrangements to suit each particular class of locomotive should be carefully determined and, equally important, steps should be taken to assure the maintenance of those arrangements in service. Surprise checks are an effective means to this end.

The Railways' Interest in Forestry

THE industries of the United States consume more than 22 billion cubic feet of timber annually. The forest lands of the country are growing wood at the rate of about six billion feet annually. Thus, our consumption is more than three times our production and we are drawing heavily on our reserve of standing timber. Of the total consumption of forest products, statistics compiled by the Southern Pine Association show that one-quarter is taken by the railways in the form of ties, car material, bridge and building timber, etc. The depletion of the supply of timber is, therefore, of direct concern to the railways because of the effect that it will inevitably have on their standards of construction. The railways can meet this situation in three ways, (1) by the treatment of their timber to increase its service life; (2) by the substitution of other materials, and (3) by the promotion of reforestation. The railways have long been leaders in the treatment of timber and nearly 90 per cent of all of the timber treated today is for their use. In spite of this fact, wood preservation has made relatively little progress on the railways, other than in the treatment of ties. Greater progress has been made in the substitution of other materials for timber with the result that it is giving way to concrete, steel and other materials in many applications. The third expedient—reforestation—has received relatively little attention from the railways up to the present time and such experiments as they have conducted have been only partially successful. The time has come,

however, when this subject must receive more serious consideration on the part of all wood-using industries. It is commonly accepted that reforestation can succeed only with government aid and under government supervision.

For this reason the railways have an interest in seeing that adequate appropriations for forestry work are included in the federal budget in order that the work now being done by the Forest Products Laboratory in stimulating the more intensive use of timbers and that the promotion of the reforestation of timber lands may be fostered.

Selling Stock to Employees in England

THE activity of American railroads and American industry generally in offering stock in the companies to employees under a partial payment plan or at slightly reduced prices has attracted wide attention and admiration in England, although as yet there have been few instances of emulating our example. Now, however, the Southern Railway of England is offering to its employees an opportunity to purchase a new issue of debenture shares under the same conditions under which the issue is offered to other stockholders of the company, i.e., at a price slightly under par. An interesting feature of the offer is that the leaders of the National Union of Railwaymen—the largest railway union in Great Britain—have, according to the Railway Gazette (London), welcomed the offer. The British railway unions are, as a general rule, considered to be more radical than the American unions, and in many respects they probably are. Yet in the present instance, as in many others, their action stands out in marked and pleasing contrast to that of certain of our reputedly conservative organizations which not only refuse to welcome any advantage which may be accorded to the employees by the companies without union intervention, but instead constantly attack any progressive move of this character.

Company Material

THE increasing frequency with which material has been selected as a topic of discussion at meetings of railway organizations during the year is noticeable. Only a few weeks after the subject occupied the attention of the Pacific Railway Club, at San Francisco, it opened the winter session of the Western Railway Club at Chicago. In both instances it proved a drawing card, bringing out approximately 230 at San Francisco and over 300 at Chicago. With another similar meeting in immediate contemplation it appears that the "market" for material as a railway topic is far from "bearish."

It is salutary that railway material should be discussed among railway officers and in railway associations. When the list of railway subjects inviting or demanding general attention is examined and weighed one against another, there are few that reveal more substance for thought. This is because of the fundamental importance of material to a railroad and of the imposing magnitude of the present problems of purchase and stores.

One of the chief problems of the present is the difficulty of getting users to appreciate the investment aspect of the material situation. It is too little appreciated that it costs real money to carry supplies in storage and that when they are kept there, not only are they costing the railroads more, but they may constitute an obstruction to the purchase of additional stock. In view of the magni-

tude of the investment in storage stocks and the need of keeping them down, co-operation between the using and serving departments is essential.

There is little doubt that the future will witness real co-operation between all the departments affected by the problems of material because results cannot be accomplished without it. The only question is whether that co-operation will be voluntary or enforced. In the light of the remarks at the last meeting of the Western Railway Club there should be no occasion for enforced co-operation. As there defined, co-operation with the stores department is not merely a case of helping the stores department but of the using departments helping themselves.

User departments and officers were reminded that prompt supplying of material is essential to increased output and it is very much to their own interest, therefore, to so co-operate with the stores departments in anticipating needs, etc., and assisting in keeping surpluses down that prompt and adequate stores service may obtain. It remains true, however, that the material situation has taken on such proportions that whether by voluntary or enforced co-operation it seems assured that railway officers are going to care more about the subject in the future. Popularizing the subject of company material through the various railway clubs and other discussion will aid materially in promoting the improvements that are bound to take place.

Competition in Transportation

IN view of conditions now affecting the railroads of the United States it seems strange that in some discussions there still appear statements to the effect that one of the main reasons why railways must be regulated is that they constitute a non-competitive industry. There is active competition in service between the railways, and, as F. H. Plaisted, assistant to vice-president of the Southern Pacific Company, points out in a letter published elsewhere in this issue, there is still active railway competition in rate-making in spite of the fact that their rates are regulated by the Interstate Commerce Commission and state authorities.

Furthermore, some of the most difficult and important problems with which railway managements are now confronted are due to competition by other means of transportation. The seriousness of these problems is aggregated by the circumstance that the railways are strictly regulated while there is virtually no regulation of competing means of transportation which are taking business from them. The amount of passenger business being taken by motor buses is rapidly increasing with the extraordinary multiplication of motor bus lines. There is no such regulation of intrastate motor bus service as is applied to railways, and no regulation at all of interstate motor bus service. The steamships operating through the Panama canal are taking an increasing amount of freight business. The railways at present are not only required to publish their rates and maintain them as published, but are prohibited by the Interstate Commerce Commission from making lower rates to the Pacific coast than to intermediate points to meet water competition. The steamship lines do not have to publish their rates, do not have to maintain them if they publish them, and can make any rates that will take the business away from the railroads.

The spectacle presented is a curious one. While the competing motor bus lines and water lines may make

any rates they like and operate or quit operating when they please, the railways by regulation have the rates they may charge fixed and can hardly take off a train or tear up a mile of line without the consent of the government. There is no industry in the world which is at present more highly competitive than transportation in the United States. But the competition is one-sided. The competitors of the railways may do almost anything they wish to take business, but because of government regulation there is hardly any way in which the railways can strike back, and because the railways, while thus roped and tied, do not successfully compete some persons criticize their managements for lack of initiative and enterprise.

The National Association of Railroad and Utility Commissioners at its recent convention in Washington gave consideration to a resolution in favor of some form of regulation of motor common carriers by the joint action of the state and federal authorities. The need for such regulation is plain. The association also adopted a resolution favoring legislation placing intercoastal water lines operating through the Panama canal under the jurisdiction of the Interstate Commerce Commission as to rate, service, etc., to the same extent as rail carriers. It would be extremely difficult to make a reasonable argument against this proposal. Vessels carrying the American flag are by law given a monopoly of our entire intercoastal traffic. They operate through the Panama canal, which was built by taxes levied upon the entire American people. The railways are given no such protection or favors by the government. The rates now made by the water carriers, and the refusal of the Interstate Commerce Commission to let the railways meet these rates without reducing other rates operate as a great and wholly unfair discrimination against the railways, and as a discrimination in favor of the people on the seaboard and against the people in the interior territory.

The Transportation Act expressly sets forth that it is the policy of the government "to foster and preserve in full vigor both rail and water transportation." That policy is not being carried out. The Interstate Commerce Commission is charged with the duty of seeing that it is carried out.

Some very interesting suggestions as to the regulation of rail and water competition were made by T. C. Powell, president of the Chicago & Eastern Illinois, in a recent address before the St. Louis Railway Club. We publish extracts from Mr. Powell's address elsewhere in this issue. The commission has now no authority to fix rates of carriers through the Panama canal. As Mr. Powell says, however, it has "offensive jurisdiction which might be effectively used. The commission may call upon any coastwise or intercoastal vessel or company for accurate statistics of tonnage carried between two ports of the United States." With information as to the amount of competitive traffic being carried by the water and rail lines the commission could decide how the business should be divided to maintain both the water and rail lines in "full vigor" and promulgate scales of rates which it would be reasonable for each of the rival classes of carriers to charge.

After it shall have done this Mr. Powell suggests that "wherever there is any indication that water lines are handling an undue proportion of the competitive traffic the commission shall handle the situation in friendly conferences with the water lines and failing to secure any satisfactory result shall promptly authorize the all-rail carriers and the joint rail and water carriers under its jurisdiction to meet on short notice, the all water rates, simultaneously giving relief from the fourth section to the extent rendered necessary by such authorization."

Apparently the commission could carry out this plan without any increase of its present authority. The Transportation Act plainly contemplates that if the railways are economically and efficiently managed the commission shall exercise its powers not only to protect the public from unjust treatment by the railways, but also to protect the railways from unjust treatment. The commission possesses and exercises the power, when a state authority fixes rates that are too low, to set them aside and establish higher rates. Why is it not equally the duty of the commission to exercise such powers as it possesses to protect the railways from undue losses of traffic to the water carriers? Not only does the Transportation Act contemplate that both rail and water transportation shall be fostered and preserved in full vigor, but under the fourth section the commission has full power to authorize the railways, in circumstances that justify it, to make lower rates for longer than for shorter hauls. Is there any better or more proper use the commission could make of this authority than to bring about a reasonable division of transcontinental traffic between the water lines and the railways? The loss of traffic to the water lines from which the western railways are suffering is one of the principal reasons why they have had to ask for an advance in rates on practically all freight not affected by water competition.

The railways could not reasonably object to any form of competition if, first, it was not subsidized by the government, and, secondly, if they were allowed freely to compete with their competitors. The present situation as respects competition between the railways and other means of transportation is a travesty on justice and commonsense.

How Railway Efficiency is Increased

A SHORT article published elsewhere in this issue of the *Railway Age* regarding five carloads of wheat which recently were moved over the Great Northern gives a good illustration of the way in which the efficiency and economy of operation are constantly increased on American railroads. The Great Northern recently has acquired and placed in service some box cars with a marked capacity of 140,000 lbs., or almost twice the average capacity of all the box cars in the country, which is about 77,000 lbs. Five of these cars were photographed together when loaded with 753,900 lb. of grain, an average of 150,780 lb., or more than 70 tons per car. The average loading of wheat in the United States in 1924 was less than 41 tons per car. Therefore, the average load in these five cars was about 75 per cent greater than the average loading of all wheat.

It has been by similar, although seldom such extraordinary, increases in the capacity of equipment, and by all the improvements in physical facilities and operating methods required to handle freight in big carloads and trainloads, that the economy of transportation has been continually increased on the railroads of the United States with the result that, in proportion to wages and prices, they handle freight much cheaper than railways anywhere outside of North America. Attention has frequently been called in these columns to the fact that the average loading of all freight cars in the United States has declined since 1920. The statistics of the Car Service Division of the American Railway Association show, however, that this has been mainly or entirely due to the fact that in these

years the volume of manufactured and other light loading commodities shipped has increased more in proportion than the volume of heavy loading commodities, such as grain, coal and lumber.

That, in spite of all the changes in transportation conditions which are occurring, including, for example, the losses of business to motor trucks and the Panama canal route, the efficiency and economy of operation of the railways as a whole goes on steadily advancing is again well illustrated by the operating statistics for August. In that month the average number of tons of freight moved in each train was 796. This was the highest record of this kind ever made, the best previous being 770 tons which was made in October, 1924. This increase in average trainload was chiefly due to an increase in the average number of cars moved in each freight train, which in August was 45.6. This also was a new high record, the best previous record being that of May, 1925, which was 44.6 cars. In August the average freight train, excluding locomotive and tender, but including the freight in it weighed 1759 tons. This also was a new high record the highest previous being 1699 which was made in July, 1925.

The benefits the railways are deriving from acquiring improved and more powerful locomotives which can pull increasingly heavy trains while maintaining relatively high speeds is illustrated by the fact that in August the average number of gross tons (which includes the weight of both trains and their lading) moved one mile per hour per freight train was 20,826. This was another new high record, the best previous months' records having been made in May and July of this year.

Still another important operating record was made in August. The average amount of coal consumed in freight service per 1,000 gross ton-miles was 125 lb., the lowest figure ever reached in any month. Some new records were also made in passenger service. The average number of cars moved in each passenger train was 6.93, the highest figure ever reported, and the number of pounds of coal consumed per passenger train car mile was 14.7, the lowest figure ever reported.

The increases in efficiency secured month by month may sometimes seem small, but when they are kept up month by month and year by year their cumulative effect becomes remarkable. The gross tonnage moved one mile per hour in the average freight train in August, 1925, was 33 per cent greater than in August, 1920; and this great increase in efficiency mainly accounts for the huge economies in operation that have been effected since 1920.

New Books

Proceedings of the Signal Section of the American Railway Association, Volume XXII, 1924. 865+231+42 pages, 6½ in. by 9 in. Bound in cloth. H. S. Balliet, secretary, 30 Vesey Street, New York City.

This regular annual publication comes out this year in a volume 2½ in. thick, the reports of the doings of the two meetings, at Swampscott and Chicago, being supplemented by 231 pages filled with papers which had been read at sectional committee meetings in various cities during the past five years. The third section in the book—42 pages—consists of a very full index. The sectional-meeting papers include the following: Incandescent Lamp Manufacture, by L. C. Porter; Alternating Current Signaling, by H. McCready; Dry Cells, by W. H. Arkenburgh; Electric Interlocking, by W. D. Cloud; and other papers by A. G. Nutting, R. M. Phinney, W. P. Borland, W. B. Murray, W. G. Beard and H. S. Balliet.

New Zealand Invites You. 28 pages. 7 in. by 9 in. Illustrated. Bound in Heavy Paper Printed in Color. Issued in the Form of a Folder by the New Zealand Railways, Wellington, N. Z.

This attractive little brochure is issued for the purpose of popularizing abroad the attractive economic and residential features of the Dominion. The opening chapter contains short descriptive matter on the geography, topography and climate. Some other headings are: "Lakes and Fiords"; "Real Joy of Living"; "This Stock-Owners' Paradise"; "Thermal Marvels"; "Mountain Grandeur"; "Rivers of Romance"; "Fairyland Forests"; "Paradise of Sport"; "Modern Railways". Excellent maps of the two main islands are included. The booklet is interesting not only as information for those who wish to learn something about the country and its advantages, but also as a worthy example of good railway publicity work.

Books and Articles of Special Interest to Railroaders

(Compiled by Elizabeth Cullen, Reference Librarian, Bureau of Railway Economics, Washington, D. C.)

Books and Pamphlets

Economics of Public Utilities, by L. R. Nash. An interesting discussion of capitalization, investment, operation, valuation, public relations, and other pertinent topics. 413 p. Published by the McGraw-Hill Book Company, New York. \$4.00.

An Introduction to the Methods of Economic Statistics, by W. L. Crum and A. C. Patton. Purposes, compilation methods, and so on. 500 p. Chicago, A. W. Shaw & Co. \$4.00.

Statistics of Steam Railways of Canada for the Year Ended December 31, 1924, compiled by Dominion Bureau of Statistics. 174 pages. Published by F. A. Acland, Printer to the King, Ottawa, Ontario, Canada. 50 cents.

Periodical Articles

Cut Cost of Terminal Movement—Use Inland Union Freight Stations, by Major Elihu Church. Suggested solution of certain terminal problems. *Marine Review*, October, 1925, p. 357-360.

International Comparisons of Real Wages, by Dr. Felix Klezl. Methods used by International Labor Office and others in comparing wages of different types of workers, and values of such comparisons. *International Labor Review*, International Labor Office, October, 1925, p. 467-483.

Lubricants and Lubrication, by James Duguid. Brief history of lubricants, and modern usages. *Mechanical Engineering*, November, 1925, p. 887-894.

Problems of Railway Consolidation and Income Tax Reductions, by Alexander D. Noyes. Comments on compulsory consolidation and other plans. *Scribner's November*, 1925, p. 561-562.

Road of Steel Pierces Khyber Pass, by P. W. Wilson. "India's Northwest frontier extended by most romantic railway in the world." *New York Times Magazine*, November 1, 1925, p. 9.

The Rust-Proofing of Materials, by M. E. McDonnell. Reviews discoveries of Research Dept., Pennsylvania Railroad regarding use of copper-bearing steel in car construction, protection of steel work by painting, and baking process of drying painted cars. *Mechanical Engineering*, November, 1925, p. 875-880.

Letters to the Editor

[The RAILWAY AGE welcomes letters from its readers and especially those containing constructive suggestions for improvements in the railway field. Short letters—about 250 words—are particularly appreciated. The editors do not hold themselves responsible for facts or opinions expressed.]

Says Routine Work Leads to Day-Dreaming

CONCORD, N. H.

TO THE EDITOR:

I noticed the editorial, "Wherein the Railroads are Fortunate," in your October 17 issue, relative to the effect upon a worker of being required to perform one task continuously. Since for the best 20 years of my life I was obliged to stand with my eyes on one certain spot to see that the work came the required distance, you might be interested in knowing how I feel toward such application after the distinct change to more favorable working conditions which has taken place in railroad shops during the last ten years.

No normal man could stand the confinement and application as I did, unless circumstances were abnormal and he lacked confidence in his ability to do anything else. The effect on the worker's mind is just opposite to what one would expect. One would conclude on watching an operator intently observing one spot that his mind must be concentrated on his work. As a matter of fact he is dreaming of the farm, forum or fireside as long as the work is right. Should something go wrong that element of our mental facilities called the subconscious will get to work and he will come to instantly.

The injurious effect of this work, you can plainly see, is that the power of mental concentration is weakened by dissipation. To offset that bad effect is a good move, and will tend to make the worker reliable, industrious and loyal—in other words, he will not be an easy quitter; you will find him on the job when wanted; and he will have a good word to say for his employers.

F. G. NEWELL,
A Boston & Maine Shopman.

Competition in Rate Making

CHICAGO.

TO THE EDITOR:

In the editorial in the *Railway Age* of October 10 under the caption "Is the Railway Industry Competitive?" there appeared the following sentence: "There may or may not be competition in rates, he (the railroad man) will say, but there certainly is competition as relates to service and rivalry as relates to operating performance."

Railroad men frequently make the unfortunate admission that there is now no competition in rates, but those closely in touch with such matters know that while generally, though by no means always, the same rates are established via competing lines, the initiation of reductions first by one line and then by another is of frequent occurrence.

The pressure from both shippers and producers for readjustments downward is constant and severe. When one railroad will not listen to their pleas they turn to another;

and we know very well how easy it is for the railroad traffic man to follow the market price (of things) down with reduction of rates in order to keep the traffic moving and how difficult and even next to impossible it is for him to follow market prices up when they go up and restore rates to normal. It is true enough that a great many of these readjustments downward are made by common consent, but very many of them which seem to have thus been made are accomplished only because the representative of one line has given evidence of his determination to put the rate in by individual notice if not concurred in. When effort to secure common consent fails the individual notice is resorted to.

It is just as true to say that there is competition in rates as to say there is competition in service. These two forms of competition come about in the same way, first one line and then another taking the initiative in shortening schedules or in reducing rates, and such action being met, so far as it is possible or considered wise to do so, by competitors. The fact that competitors are compelled and find it necessary to meet this competition proves that the competition does exist, rather than the contrary, and this is just as true in the case of rates as it is in the case of train schedules and, for that matter, also in the case of performance under such schedules.

It is to be regretted that railroad men ever think it necessary to make the admission that there is no competition in rates, whereas if one stops a moment to think of it there is just as much competition in this as in any other direction.

F. H. PLAISTED,
Assistant to Vice President, Southern Pacific Company.

Divided Responsibility an Evil in Handling Train Orders

HAILEYVILLE, Okla.

TO THE EDITOR:

In the article in the *Railway Age* of August 29 by H. C. Cross, train dispatcher, on the St. Louis Southwestern, at Tyler, Tex., entitled "A Four-Year Test of the '19' Train Order," the author says, in the last paragraph, that "the only real objection that can be raised to the type of clearance card herein mentioned is that it divides responsibility. Telegraphers should be taught that they are responsible for the delivery of all orders. The dispatcher should report each failure on the part of the telegrapher to fill out the clearance card but the discipline should be meted out to the telegraphers very lightly. This will permit dispatchers to report failures without being responsible for the discharge of the party. If discipline is severe the average dispatcher, not wishing to be instrumental in causing great trouble to his co-worker, shoulders the responsibility and says nothing. The proper handling of this question will go a long way in removing the danger of divided responsibility."

It is divided responsibility, that is, today, causing more collisions than any other thing. Whenever one man feels that if he overlooks his hand "George" will catch the error, the whole organization is weakened. If each employee is taught that he, and no one else, is responsible for the duties assigned to him, then train operation will become safer.

The procedure advocated by the train dispatcher from Texas will have a tendency to make operators more careless in the handling of train orders. I am reminded of a dispatcher with whom I worked some years ago. Who put out an order at one time to a train at a certain place which the operator overlooked. A subordinate officer ad-

vanced the opinion that the train dispatcher was equally responsible with the operator. This dispatcher raised a big disturbance ridiculing the idea of holding a train dispatcher responsible for a telegrapher failing to deliver an order! Some years later, however, after he was made chief dispatcher, a similar failure occurred and he wanted the train dispatcher shot at sunrise! Many times such circumstances as these are responsible for the passing of judgment.

When the train dispatcher places the orders properly at the different telegraph stations, the responsibility for delivery is with the station operators and no one else. A dispatcher on a busy railroad nowadays, especially with the telephone, where the interruptions are frequent and often unnecessary has his hands full in placing the orders for delivery without having to assist the operators in making the delivery.

J. L. Coss,
Train Dispatcher, Rock Island Lines.

Rough Stops— Who Is Responsible?

NEW ORLEANS, La.

TO THE EDITOR:

Your editorial of August 22 on Locomotive Running as a Fine Art, making observations about the "temperament" of enginemen, evidently was not intended as a very weighty or exhaustive discussion of air brake practice and, if I offer some criticisms in a serious vein, I fear that you may doubt the quality of my wisdom and discretion. And, indeed, I do apologize to you and to your readers; for what I shall say is already sufficiently known—or ought to be known—to well-informed mechanical men who read the *Railway Age*; but I cannot refrain from recalling a little past experience.

The writer has traveled many thousand miles in Mexico, and most of the trains and engines were handled by "American runners"; and in addition we found American air-brake instructors. We were introduced to some rough and some mighty smooth train handling. On the mountain grade south of the City of Mexico we found the best brake adjustment that it has ever been our privilege to witness. As I recall the trip, the grade was four per cent and the train stopped every few miles to let the wheels cool off. The engineer (I rode the engine) took me back and let me see the condition of the wheels and brake shoes at every stop. The brake shoes showed a uniform wear and heat; and that's something we do not see on American cars. The car-men were Mexicans, but the three "American runners" looked after the brake adjustment, because their lives were at stake. To say that the above trains were handled smoothly is putting it very mild. Why? Simply because they had real brake adjustment. "Temperamental?" Your Granny's night cap! It is brake-adjustment brains that's needed.

A better understanding of conditions of track, brakes and all the other conditions is an essential element. What does your average train master, who comes out of the office, know about these things?

Your article would have been better named "Brake Adjustment as a Fine Art." This is one of the arts that never has been adequately taught by American air-brake instructors. On the other hand, the Mexican air-brake instructors were sent to the Westinghouse air-brake plant to learn the brake from the rail to the bottom of the car (and engine) and, of course, that included scientific brake adjustment.

From the very beginning, our American air-brake instructors bamboozled the railroad managements into be-

lieving that they could teach the engineers how to overcome all the ills of the brake devices, difference in weights of cars, loaded or empty and unequal piston travel as well as unequal brake shoe clearance and all the other conditions that might bob up from time to time. They set out to accomplish everything by simply teaching brake valve manipulation and brake pipe reductions.

In Mexico as in other foreign countries they do not have the heavy cars and engines that American railroads have; they have better throttles and better mechanics to keep up the engines. Each man does his work under first-class supervision. "Jim Skeevers' Object Lessons" for the benefit of mechanical men should be reprinted and carried in all railway papers.

Some railroads have bought junk instead of real friction draft gear. The late Walter V. Turner gave our railroads much boiled down wisdom. He says: "You see that the cylinder pressure, and consequently the braking power of the car, can be doubled within the limits of permissible variations of piston travel in the same train. These are six and nine inches, and yet the brake-cylinder pressure varies nearly 100 per cent, from the same reduction."

At the Air Brake convention of 1916, Mr. Turner said: "It seems to me that during the last few years this association has been largely wasting time trying to find out how to create some kind of an engineer who could eliminate conditions that exist outside of and independent of the engineer. Since my first connection with this Association (in 1902) this subject (piston travel) has been up every year * * *. The triple valve puts too much air pressure in the cylinder, but it can only do it when you gentlemen have neglected your duty. * * * Careful investigation of the complaints of rough handled passenger trains indicates that most of these troubles are due largely to non-uniform braking power and to the time in which it is developed, as a result of improper piston travel. * * *" I'll quote another paragraph from Mr. Turner's remarks to the Air Brake Association: "I wish to state that a great many * * * air brake instructors do not have the influence their positions should give them; for they think valves, talk valves and see only valves. If they would study principles, as well as ports and passages; equipments, as well as valves; equalization as well as equipments, and conditions as well as conversation, they would become the all-around air brake men who alone can command recognition."

AMERICAN RUNNER.

THE OWNERSHIP of the Illinois Central System on September 1, 1925, was invested in 21,576 holdings of common and preferred stock; and 18,902 of these holdings were of less than 100 shares each. Of the 14,563 stock holdings of record four years ago, 12,645 were holdings of less than 100 shares. As the total number of holdings of Illinois Central stock has increased, the number of small stock holdings has increased proportionately, 87½ per cent of the total number of holdings being now in this class.

PROTECTION OF RECORDS and the construction of fire proof vaults is the subject of a pamphlet which has been issued by the National Fire Protection Association, copies of which can be had from the chairman of the committee which prepared it, H. P. Weaver, 135 South Fifth street, Philadelphia. It is a report which was presented at the annual meeting of the association last May and is issued now for the purpose of inviting discussion and criticism, the association having not as yet adopted it finally. The report contains a tentative specification for ground supported vaults and for vault doors; and a schedule for guidance in the preservation of records for different lengths of time, with notes concerning the importance of getting rid of papers for which it is not profitable to provide storage room.



General View of Sandusky Car Dumpers Before Reconstruction Began, Showing Old Car Dumper at Right

Pennsylvania Builds Large Car Dumper in Record Time

*New facilities increase capacity thirty per cent at Sandusky
—Completed in seven months*

THE Pennsylvania placed a new 120-ton capacity coal car dumper in service at Sandusky, Ohio, on July 6, or only a few days more than seven months after the facilities which it replaced were taken out of service. In addition to the car dumper this project included the construction of 1010 lin. ft. of concrete dock, the widening of the slip channel at the inner end to accommodate longer vessels at No. 1 dock, and the reconstruction of the loaded and empty car yards serving the two coal machines at this port.

These improvements were made in anticipation of the increased movement of lake cargo coal from the West Virginia and Kentucky fields over the Pennsylvania's branch from Columbus to Sandusky where it is transferred to vessels for shipment to upper lake points. The results of this season's operation so far have justified the large expenditure made for 4,318,000 tons of coal were handled at Sandusky up to September 30 of this year; and it is expected that the total for the season will approach 6,000,000 tons as compared with 4,331,000 tons in 1924, which was the record tonnage at this port up to that time.

The new car dumper on Dock No. 1, which was constructed by Heyl & Patterson, Inc., Pittsburgh, Pa., is the third coal unloading machine to be built on this dock. The first was a Thornburg Engineering Company's rolling lift dumper, erected in 1897, with a capacity for handling 40-ton cars at a maximum speed of 15 cars per hour. This was replaced in 1907 by a McMyler Manufacturing Company's standard lifting dumper having a capacity for handling 70-ton cars. In 1914 a Wellman-Seaver-Mor-

gan type car dumper of 100-ton capacity was installed on the west side of the slip, No. 2 dock having been rebuilt in concrete and the slip widened and deepened at that time.

Work Was Done in Record Time

The time of completion of the recent improvement was an essential part of the program in order to get the new dumper in operation as early in the summer as possible. The old dumper on Dock No. 1 was in service until late in November, 1924, and on November 25, the Hecker-Moon Company of Cleveland, Ohio, which was awarded the contract for the new foundation work, started dismantling the machine. Work progressed rapidly during the entire winter on the construction of reinforced concrete pier footings for the new car dumper and on the concrete dock face for No. 1 dock. On December 10 the American Construction Company, as sub-contractors of the Hecker-Moon Company, started tearing out the shore end of Dock No. 1 with its marine equipment, preparatory to setting crib dock foundations on the new line of the widened slip and excavating the rock within this area to provide a channel depth of 24 ft. below mean lake level.

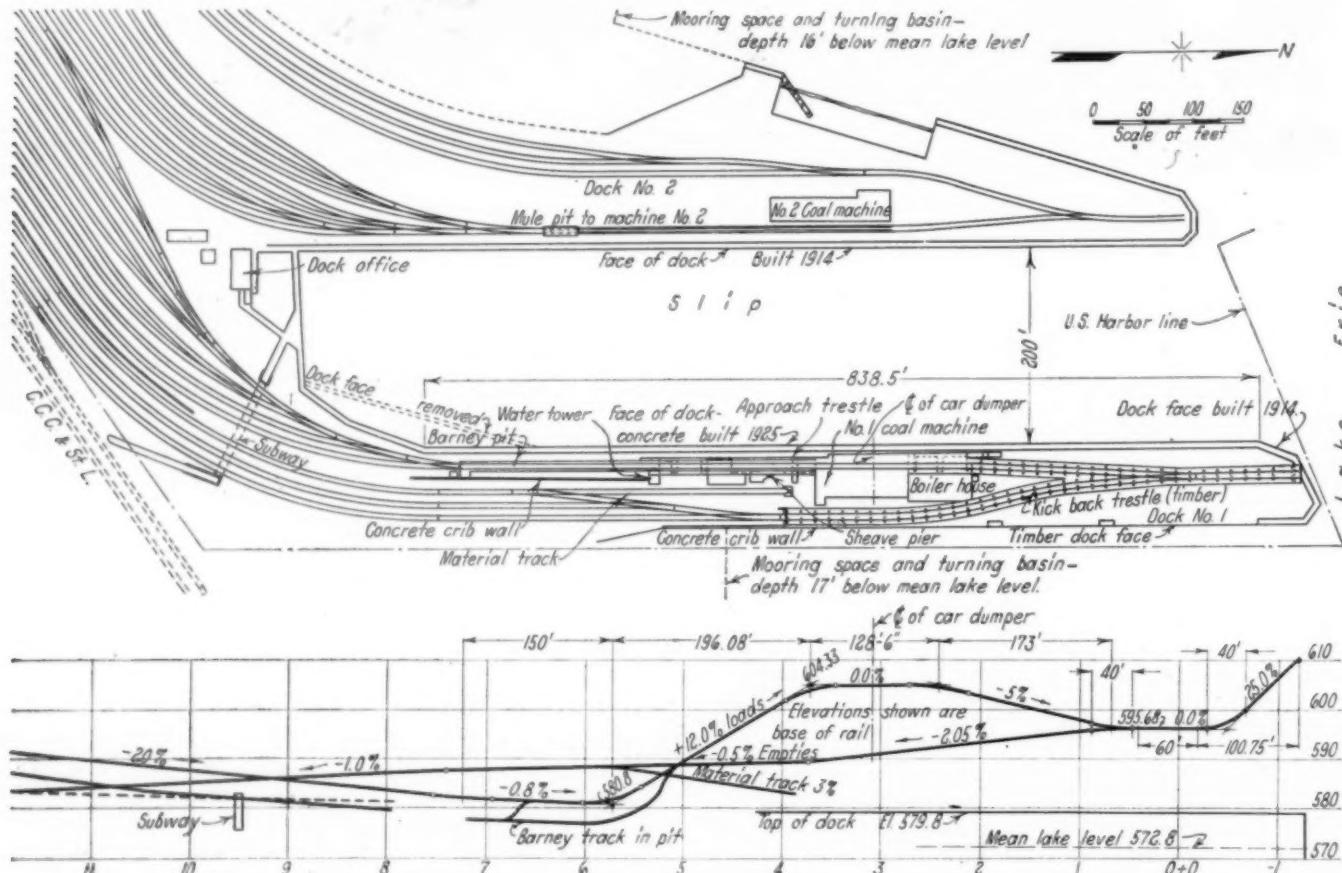
In February, 1925, the Ferguson-Edmondson Company started on the grading and track work involved in the yard reconstruction adjacent to the docks. In the meantime a contract had been awarded to Heyl and Patterson on November 24, 1924, for the new car dumper, complete above foundations, and the material was fabricated during the winter in their shops at Pittsburgh. In March, 1925, their erection derrick was installed on the outer end of

Dock No. 1, north of the site of the new dumper, this being the only available space, and when the concrete foundations were completed this traveler was moved along the dock to a position behind the site of the structure. On April 23, 1925, the first steel was placed when the boilers were unloaded and on June 27 the erection was completed when the telescopic chute was attached to the outer end of the pier.

The first coal was unloaded into a boat on July 2 and on July 6, the plant went into regular operation. There was only an interval, therefore, of seven months and a few days between the time of awarding the first contract and the starting of coal unloading with the new car dumper, which is considered to be a record for a construction project of this character. This short construction period is felt to be all the more noteworthy because this was the

terruptions to service. The cradle hoisting engines are of sufficient size to hoist the maximum car with 100 lb. steam pressure at the throttle and over 40 cars per hour can be handled with engine speeds not exceeding 60 r.p.m. while the operator can run them as slowly as three revolutions per minute.

The boiler plant consists of four 250 hp. dry back Scotch boilers built for 150 lb. pressure. Whereas previous dumpers employed sheaves with a diameter of 40 times that of the rope or less, the Pennsylvania dumper has sheaves with a diameter of 48 times the diameter of the rope. The cradle is hoisted by four groups of $1\frac{1}{4}$ -in. cables arranged in seven parts. Ten $1\frac{1}{4}$ -in. main counterweight cables and eight $\frac{7}{8}$ -in. clamp cables are so arranged that they assist in elevating the cradle. The design of this cradle provides for a 50 per cent impact while



first car dumper to be constructed by this company, and involved several new features in addition to being the largest capacity dumper installed on the Pennsylvania System. Furthermore the progress of construction was greatly handicapped by the congested condition on the dock which was only 80-ft. in total width, and to the fact that several contractors were carrying on operations at the same time on different parts of the project. In April, the car dumper on No. 2 dock started its regular season's operation which further complicated the construction difficulties on the new project.

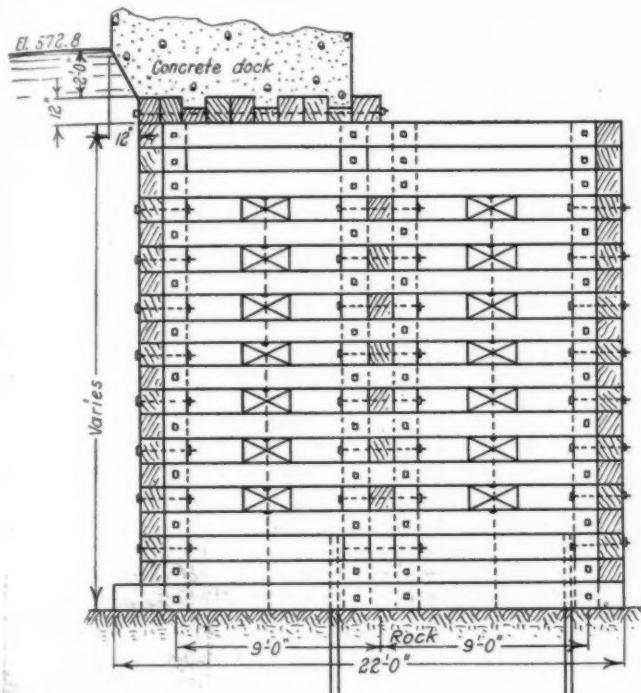
The Design of the Car Dumper

The car dumper was equipped with direct-connected slow speed engines, having balanced piston valves to reduce the vibration caused by the high speed, geared engines, with their unbalanced flat valves arranged in a vertical plane, which in turn leads to breakdowns and in-

hoisting, while the ropes, which are in continuous operation, provide a 50 per cent greater factor of safety than has heretofore been common practice. With the large sheaves and the high factor of safety provided in the operating ropes, a long rope life is assured. A minimum thickness of $\frac{3}{8}$ -in. metal was also adhered to throughout the design of all parts of the structure. The boiler plant is also fully equipped with pumps, feedwater heater and steam jet ash conveyor system and all modern facilities have been installed to insure safe and efficient operation, including toilet facilities and steel locker equipment for employees.

The haulage engine, which is also direct-connected and of the large slow speed type with balance piston valves, is provided with an automatic slow down and stop at each end of the haulage. The movable arm formerly provided in the haulage car has been replaced with a spring buffer, which has a travel of 10 in. and which has eliminated

practically all of the shock both in the haulage car and on the draft gear of the road equipment. The arrangement for returning the haulage car to the pit at the foot of the incline is unique in that all swinging switches in

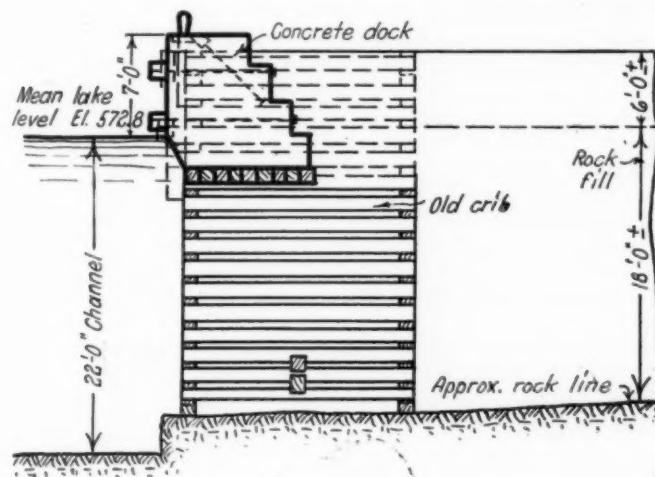


Section Through the New Crib and Dock

the tracks have been eliminated, this being accomplished by spreading the gage of the wheels of the haulage car.

One of the important features in the design of this

The car dumper structure is supported on eleven piers, tied together with cross girders and beams, with a four-foot slab over the entire area, forming the engine-room floor, all of reinforced concrete construction. The four piers on the slip side carry the heaviest loads and extreme care was taken to insure that these footings rested on solid rock with ample bearing areas. Considerable difficulty



The Concrete Dock was Built on the Old Timber Crib

was experienced in getting these foundations down through the timber rock-filled cribs to the ledge rock which was found to be several feet deeper than was anticipated when the work started. The rear column footings rest on hard clay with rail anchors driven through this clay to the solid rock. Sheetings of Lackawanna steel piling was left in position and steel rail reinforcing was



The Reconstruction of the Dock Wall was Carried on During the Winter

dumper is the fact that it is capable of handling the longest and heaviest cars now used in the coal trade with reserve capacity for handling larger cars. The clear dumping space for an overturning car is 65 ft. It is designed to handle a 120-ton car fully loaded giving a total lighting load of about 330,000 lb., but with sufficient reserve capacity so that 150-ton cars may be handled in the future.

used in all the piers, anchored into the rock footing to resist any tendency to lateral movement.

Approach and Run Off Trestles

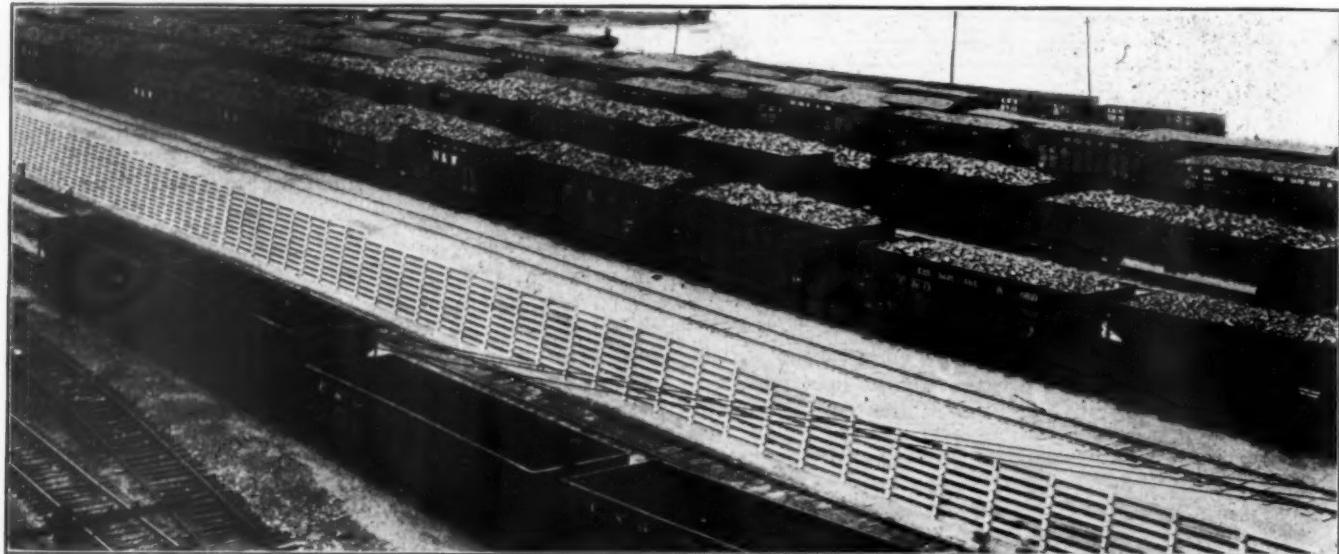
The approach track to the dumper rises on a 12 per cent grade, with vertical curves at each end, and is carried on a trestle consisting of three 30-ft. I-beam spans and a

69-ft. steel deck girder span, all supported on concrete piers, and having a timber walkway with a pipe hand railing on each side. An additional concrete pier under the upper end of the trestle supports a four-sheave setting for the haulage ropes; there is also an intermediate rope support on the concrete pier. The haulage pit for the barney car extends for 215-ft. at the foot of the approach. This is of reinforced concrete construction with specially designed track supports for the main running rails and the narrow gage barney track, the latter track being partly in the pit and partly at the same elevation as the running track.

The track on which the empty cars leave the dumper is carried over the coal bins on a two-span steel deck girder structure for 67 ft., thence on a timber trestle of frame bents, spaced 14-ft. on centers, with concrete footings, for a distance of 300 ft. to the kick-back, and thence along the east side of the dock in the rear of the dumper on a similar trestle about 350 ft. long. This trestle has a timber walkway with a pipe hand railing on each side

tion of 723.5 lin. ft. of concrete dock wall on existing timber rock-filled cribs. The old timber dock face was torn out to an elevation two feet below mean lake level and the concrete wall constructed in alternate sections 40 ft. long between expansion joints with a cast iron mooring post in the middle of each section. The timber cribs were constructed in 1892 when the original dock was built. They are 16-ft. wide and rest on solid rock at an elevation varying from 16 to 24 ft. below mean lake level. Examination of the cribs before depositing concrete for the new dock wall indicated that the timber below water was in excellent condition. No work was done on the timber dock face on the east side of Dock No. 1, except to construct, at intervals, four sections of concrete wall, each 15 ft. long, with a mooring post in each section to provide for tying up empty vessels on this side of the dock which is used only for a mooring basin.

At the shore end of Dock No. 1, the southeast corner of the slip channel was widened and excavated to provide the same depth of water as in the balance of the slip,



Concrete Crib Retaining Wall Gave Added Track Room Between Loaded and Empty Car Yards

of the track. The empty cars run by gravity from the machine to the kick-back, then reverse direction and run through a switch and down into the empty yard which branches out into three tracks just south of the dumper; thence around a 12-deg. curve at King street and west to the throat of the yard at the Mill Creek bridge.

The old machine on Dock No. 1 was operated by the so-called "Indirect Feed," that is, the loaded cars went past the dumper and to the kick-back before being pushed up the approach to the cradle. The new machine is laid out for the "Direct Feed" method of operation which is considered to be a faster and safer method of handling the loaded cars, by permitting them to run by gravity from the hump direct to the haulage pit. This change in layout necessitated the complete reconstruction of the load and empty yards serving the No. 1 dock, which involved the excavation of about 50,000 cu. yd. of material and the handling of about 12,000 lin. ft. of track, including 35 turnouts. In the new layout all frogs used were No. 8, and the old No. 7 leads into the west end of the No. 2 load yard were also replaced with No. 8 frogs. The new turnouts were laid with 100-lb. track material while 85-lb. rail was used elsewhere. The deck girder bridge over Mill Creek at the throat of the yards was widened to conform to the new track layout.

An important feature of this project was the construc-

namely 24-ft. below mean lake level, and 286.5 lin. ft. of concrete dock wall was constructed on the new dock line, this wall resting on new timber cribs, 21-ft. wide, sunk to solid rock at an average depth of 12.5 ft. below mean lake level. This change in dock line facilitates the loading of 600-ft. boats at the No. 1 dumper by providing 115 ft. longer straight dock face south of the machine than existed under the original layout.

Concrete Cribbing Saved Track Room

At several places in the work, retaining walls were built of pre-cast reinforced concrete crib construction. The longest wall was adjacent to the hump of the load yard, and it was decided to make this an experimental installation to test out different designs of cribbing. This wall is 1,186 ft. long with a maximum height of 15 ft. and a face batter of 2 in. per foot. Front and rear stretchers were laid up with open face. The construction of this wall permitted one additional track to be laid in the empty yard without sacrificing a track in the hump yard, which track space would otherwise have been occupied by the slope from the embankment. The following types of cribbing were used in the order named from the west end to the east end of the wall, the adjoining sections being constructed independent of each other at the joints.

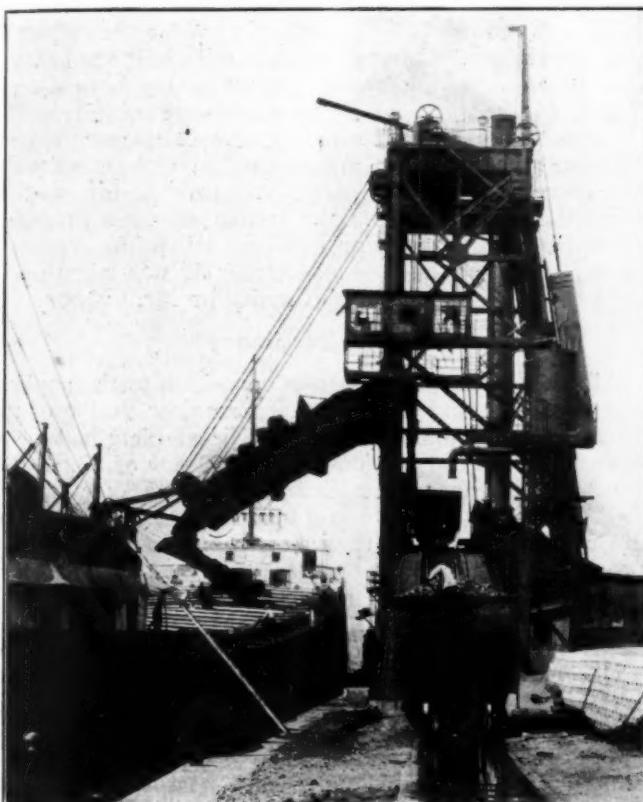
Sec. 1.—Concrete Products Co. of America, Pittsburgh, Pa.

Sec. 2—R. C. Products Co., Cleveland, Ohio.

Sec. 3—The Gerald Co., Chicago.

Sec. 4—Massey Concrete Products Corporation, Chicago.

The bottom course of the wall was laid about 2 ft. below the rail of the empty yard tracks and longitudinal drain tile was provided along the base of the wall. Two other walls of similar construction about 250 ft. and 120 ft. long respectively were installed on Dock No. 1, where there was not room for the natural slope from the embankment of the empty yard tracks. Cribbing furnished by the R. C. Products Company was used in these two walls, and also in two or three other places where short sections of retaining walls were required. All of these concrete crib walls were installed for the railroad under contract by the Ferguson & Edmondson Company which handled the grading and track work.



Car Dumper Loading a Boat, with a Loaded Car Leaving the Dumper

Other Facilities

In order to provide access for pedestrian traffic to and from the docks without having to cross yard tracks at grade, a reinforced concrete subway, 105 ft. long, was constructed with a clear opening 6 ft. wide by 7 ft. high under the load and empty yard tracks with a concrete paved approach from the foot of King street and a concrete walkway to the dock office. Ducts were installed in the side walls of the subway to carry power, light and telephone lines through to the dock layout and the subway was provided with lighting and drainage facilities.

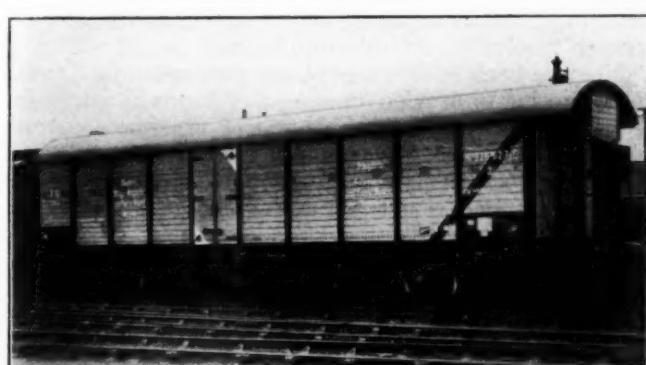
A system of flood lights was installed for lighting the yards and dock layout, using Pyle-National Company's 23-in. and 14-in. projectors with 1,000 watt lamps. Two steel towers, 90 ft. high, on concrete foundations, were provided, one at each end of the layout, adjacent to Monroe street and King street respectively. These carry the flood light for illuminating the yards where operations are carried on at night throughout practically the entire

operating season. Other flood lights are hung on the car dumper structures to light the approach and runoff tracks and the dock to facilitate shifting of vessels.

All power and light lines are in underground conduit from a terminal pole at the foot of King street where connection was made to a pole line of the Ohio Public Service Company, furnishing 2,300 volt, 60 cycle, 3 phase, alternating current. A primary power line was carried from this point to the new car dumper on Dock No. 1 in fiber duct laid in concrete with manholes at convenient locations. At the dumper are located the oil switches, switchboard control and a 300 k.w. motor generator outfit for handling the current supply to the electrically-operated movements of the car dumper, also the lighting circuits and secondary power line to the car dumper on Dock No. 2. A bank of three 15 k.v.a. transformers in the engine room provides for supplying 220 volt a.c. current to the lights when the motor generator is shut down. An auxiliary connection is provided to a 75 k.w. steam-driven generator previously installed at the No. 2 car dumper so that when the No. 1 machine is not in operation, or when the power company's supply line is out of commission for any reason, sufficient power can be furnished for the lighting circuits, the flood-light tower at King street and the motors at the No. 2 machine. The flood-light tower at Monroe street is operated by a service connection off the 2,300-volt line of the Ohio Public Service Company, the current being stepped down to 110 volts. All of the other lighting circuits are arranged for 220 volts, as are also the motors on both of the car dumpers.

Although the cradle hoist and haulage cars are operated by steam engines, all other movements of the machine are operated electrically. The pan screw drive mechanism is operated by a 330 r.p.m. MCB series-wound enclosed type motor and the pan hoisting engine is equipped with a 425 r.p.m. No. 165 series-wound semi-enclosed type motor. Series-wound enclosed type motors are used on the chute operating engines, and on the trimmer.

Contracts for this work were awarded by, and the entire project was carried out under, the general supervision of A. C. Shand, chief engineer, of the Pennsylvania System at Philadelphia, Pa. The construction work was carried out under the direction of Robert Trimble, assistant chief engineer, Pittsburgh, Pa., A. P. Weymouth, assistant engineer, and H. W. Hinkley, resident engineer in charge in the field. These coal docks are operated for the Pennsylvania System by the Lower Lake Dock Company, with J. M. Amsden, general superintendent of docks, and C. H. Hampe, superintendent at Sandusky.



Wide World

Automobile Box Car Built for Service Between Italy and England via the Channel Car Ferry

Nickel Plate Hearing Concluded

WASHINGTON, D. C.

THE hearing of testimony for and against the Nickel Plate unification application of O. P. and M. J. Van Sweringen and the roads involved, before Commissioner Meyer of the Interstate Commerce Commission, was brought to a close on October 30, and December 28 to 31, inclusive, was fixed upon as the time for the oral argument before the full membership of the commission. The brief for the applicant is to be filed by November 15, the reply briefs of protestants are then to be in by December 15 and the applicant then has until December 25 to file its reply brief.

H. W. Anderson, of counsel for the Scott committee representing minority stockholders of the Chesapeake & Ohio, asked for a liberal allowance of time in which to file his brief, at least 45 days, and that the argument be heard in the latter part of December, while W. A. Colston, general counsel of the Nickel Plate, offered to cut down the time to be allowed for his brief so that argument might be had in the early part of December. He said that while the record in the case is voluminous the issues are comparatively simple and that the commission's authorization ought to be made effective as near to the first of the year as possible for accounting reasons. Mr. Anderson, however, had an engagement in the Supreme Court for the early part of December and Commissioner Meyer finally set the dates as above stated. E. C. Bailly, representing Hocking Valley minority stockholders, said he would want one half day of the time allowed for argument. In concluding the hearing Commissioner Meyer said: "I assume that there is nobody who wishes to be heard who has not been heard to the extent he desired to be heard." The hearing was begun on April 15, the application having been filed with the commission in February, and the record approximates 8,500 pages, together with 386 exhibits.

John Sherwin, chairman of the board of the Union Trust Company of Cleveland and vice-president of the Nickel Plate, testified on October 29 at the request of Mr. Anderson and brought with him the files of the bank relating to the deposit of the Vaness company stock, which controls the Nickel Plate, with the bank, and also those relating to the contract to purchase 8,000 shares of stock of the Greenbrier & Eastern for the C. & O., at \$125 per share from A. B. Crichton of Johnstown, Pa. He said that he knew nothing of this matter until he looked at the file but that it showed that J. R. Nutt, president of the bank, had been in error in testifying that this contract had been made by the bank at the verbal request of O. P. Van Sweringen. He produced a letter written by Mr. Van Sweringen as chairman of the C. & O., accompanied by proper resolution of authority from the C. & O. board, asking the bank to execute the contract with Mr. Crichton and agreeing to provide the necessary funds in ample time. He said he knew nothing about any agreement covering the deposit of the Vaness stock prior to the one dated July 16, 1925, which Mr. Anderson had obtained from Newton D. Baker under an understanding it would not be put in the record.

Mr. Anderson said that the copy furnished him was dated subsequently to Mr. Van Sweringen's testimony regarding the existence of the trust agreement and that therefore the stock must have been deposited at an earlier date. Counsel for Mr. Sherwin then called his attention to the fact that the agreement was signed on July 16, 1925, but as of January 11, 1924, whereupon Mr. Anderson asked Mr. Sherwin to have a search of the files made and send in for the record any entry made in the books

of the bank at the time the stock was deposited. He also said that he would try to have Mr. Baker agree that the agreement may be put into the record so that it could be used in argument.

J. W. McInerney, statistician for Wood-Low & Co., of New York, who hold or represent a large part of the Hocking Valley minority stock, submitted a number of exhibits including an analysis of the earnings available for the stock of the various companies included in the proposed merger for 1923 and 1924, from which he figured on various bases the amount of new Nickel Plate stock which ought to be allowed in exchange for them. These showed, he said, that the terms offered are grossly unfair to the stockholders of the Chesapeake & Ohio and the Hocking Valley and that they ought to receive a larger proportion of the new stock, while the Erie and Pere Marquette stockholders receive too much, because, he said, they were able to "deal at arms length" with the Van Sweringens, whereas the latter were in control of the C. & O. and Hocking Valley. He also pointed out several phases of the plan which he considered objectionable. He said his firm had protested vigorously against the proposal and that Mr. Van Sweringen had sent an assistant, Mr. Steers, to see them, who could give no information as to the basis on which the terms had been arranged other than that "everything had been taken into consideration." Most of the time on October 30 was taken up in cross-examination of Mr. McInerney by Mr. Colston.

Other Testimony

Albert I. Stiles, intervenor in opposition to the application, took the stand to testify that Examiner Young of the commission had told him that the Nickel Plate had never reported to the commission regarding loans of \$3,500,000 from the Guaranty Trust Company and \$5,830,000 from J. P. Morgan & Co. He said that, not being a lawyer, he did not know whether these borrowings came under the provisions of paragraph 9 of section 20a of the law, but that he thought the law required them to be reported to the commission within 10 days.

Mr. Colston said that these were loans on open account and did not come under the provisions requiring a notification to the commission within 10 days of the issuance of short term notes.

E. M. Thomas, comptroller of the Chesapeake & Ohio, was recalled to the stand and asked for information similar to that asked of the other roads as to the additions and betterments made by the Chesapeake & Ohio in recent years which have not been capitalized, against which bonds might be issued in the same way that \$26,000,000 of Nickel Plate bonds were issued against past expenditures. He said that the only expenditure of this kind which he could state definitely could be capitalized was \$1,140,000 for improvements against which first lien and improvement bonds may be drawn and for which an application to the commission is now being prepared.

Commissioner Meyer read into the record a letter from the chairman of the Virginia Corporation Commission saying that a letter which he had addressed to the federal commission on February 26, 1925, "should not be construed as an approval, since it was written as a matter of form and prior to the investigation" being conducted by the Interstate Commerce Commission, and that the Virginia commission "desires to withdraw any approval and to stand before your commission in a neutral position."

Mr. Colston asked that the decision of the New York Public Service Commission, approving the application in so far as it relates to New York state, be made a part of the record.

Regulation of Competing Rail and Water Carriers

President T. C. Powell of Chicago & Eastern Illinois shows how commission could equitably divide transcontinental traffic

TC. POWELL, president of the Chicago & Eastern Illinois, in an address before the St. Louis Railway Club on October 9, offered some highly interesting suggestions regarding a way in which the Interstate Commerce Commission, in the exercise of the powers now vested in it by the Transportation Act, could so regulate rates as to enable the railways to get their fair share of transcontinental business in competition with steamships operating through the Panama canal. Regarding this subject, Mr. Powell said:

"Doubtless you already know that while the American railroads are subject to competition of the railroads of Canada and Mexico, the coastal and intercoastal traffic from port to port in the United States is protected against foreign owned vessels so that such foreign vessels cannot legally handle any freight or passengers moving wholly by water from one port in the United States to another port in the United States, except as provided in Section 27 of the Merchant Marine Act. Such handling, if detected, is heavily fined.

"Now the obligation of the Interstate Commerce Commission under the Transportation Act of 1920 is not only to theoretically adjust the rates of freight, passenger fares, express charges, etc., so that each group of railroads may earn as nearly as may be $5\frac{3}{4}$ per cent upon the value of the property devoted to transportation; but the commission is also admonished that it is the policy of Congress while promoting water transportation 'to foster and preserve in full vigor both rail and water transportation.'

"Offensive Jurisdiction"

"This wording clearly to my mind, creates in the commission, an offensive jurisdiction, as well as a defensive one.

"By 'offensive jurisdiction' I mean that the commission cannot rest merely because the rates of freight, passenger fares, etc., fixed by the commission are symmetrical in adjustment and which with a monopoly of the traffic might in their judgment furnish sufficient net income to accomplish what the law contemplates; but their duty to the public and to the railroads requires them to take whatever steps are necessary, short of fixing the actual rates by water, to prevent a competition so ruinous as to destroy the efficiency of the rail carriers, or to destroy or impair their full vigor.

"The converse of 'vigor' is 'debility' and nowhere in the various laws, nor in the debates in Congress; nowhere in the press, nor in the statements of private individuals, do we find a thought that there is in this country a desire or even a willingness to have a debilitated transportation system.

"On the contrary, the words 'in full vigor' have a very expressive meaning and Congress very evidently chose them carefully to counteract any possibility that protected water transportation systems would be permitted to break the rail lines, which although more vital to

the United States would otherwise be unprotected.

"How then, can the commission maintain in 'full vigor' the rail lines which are now suffering from the competition afforded by the opening of the Panama canal?

"Please bear in mind that to and from such points as Chicago, Buffalo and other cities reached by Canadian lines, it is possible with the recognition by the Interstate Commerce Commission to set up a through route from and to points in the United States on the Atlantic, Gulf or Pacific ports in part over 'Canadian rail lines and their own or other connecting water facilities.'

"But Section 27 of the Merchant Marine Act goes even farther, because as I read it, the commission may recognize a route from St. Louis to Chicago, thence by a Canadian line to Montreal and thence by a German boat to San Francisco; or again from St. Louis to Chicago, thence by a Canadian line to Buffalo, thence to New York via any one or more of the United States lines from Buffalo to New York, thence delivered to a Japanese vessel for Los Angeles.

Earnings Below Fair Return

"You will recall that the statutory return for the first two years to the carriers subject to the Transportation Act, was made up of two factors. First, a basic rate of return upon the property of $5\frac{1}{2}$ per cent—and second, of a discretionary percentage of not to exceed one-half of one per cent, and that the Commission for the first two years fixed a total rate of 6 per cent—and although the carriers did not earn 6 per cent, the commission was so hopeful that at the end of the two years they reduced the rate of return to its present total figure of $5\frac{3}{4}$ per cent, and still the statutory return has not been earned upon the 'property devoted to transportation.'

"The value of the property devoted to transportation is constantly increasing through purchase of new cars, engines, machinery and tools, buildings, real estate, rails, bridges, car floats, etc., and each addition to, (or diminution in), property values is duly and periodically reported to the commission.

"The Interstate Commerce Act provides, (Section 15 amended) 'Nor shall the commission have the right to establish any route, classification, or practice, or any rate, fare, or charge when the transportation is wholly by water.'

"But the act also provides that 'In the case of a through route, where one of the carriers is a water line, the commission has the power to prescribe the maximum rates, fares, and charges applicable thereto.'

"I cannot find that any commission or board has been given such jurisdiction over port to port rates within continental United States, as to permit any such commission or board to prescribe the measure of such rates either as to maximum or minimum. The Shipping Board Act of September 7, 1926, merely provides that it does not confer upon the shipping board concurrent power or jurisdiction over any matter within the power or jurisdiction of the

Interstate Commerce Commission, neither has the shipping board any jurisdiction over intrastate commerce.

"But it has been decided in the courts that the Interstate Commerce Commission may call upon any coastwise or intercoastal vessel or company for accurate statistics of tonnage carried between two ports of the United States. This is in addition to the jurisdiction of the commission over joint rail and water carriers.

"The Interstate Commerce Commission has no jurisdiction over intrastate rates, except as they apply to foreign commerce and except as they may detrimentally affect the just and reasonable rates fixed by the commission on interstate traffic.

"This latter point is covered by Section 13 of the Interstate Commerce Act which reads as follows, after providing for a proper investigation of certain intrastate rates by the commission:

"Whenever in any such investigation the commission, after full hearing, finds that any such rate, fare, charge, classification, regulation or practice causes any undue or unreasonable advantage, preference, or prejudice as between persons or localities in intrastate commerce on the one hand and interstate or foreign commerce on the other hand, or any undue, unreasonable, or unjust discrimination against interstate or foreign commerce, which is hereby forbidden and declared to be unlawful, it shall prescribe the rate, fare or charge, or the maximum or minimum, or maximum and minimum, thereafter to be charged, and the classification, regulation, or practice thereafter to be observed, in such manner, as in its judgment, will remove such advantage, preference, prejudice, or discrimination. Such rates, fares, charges, classifications, regulations and practices shall be observed while in effect by the carriers parties to such proceeding affected thereby, the law of any State or the decision or order of any State authority to the contrary notwithstanding."

"To sum up the conditions as we find them today:

1. The Interstate Commerce Commission by order or opinion, or by recommendation has fixed a scale or scales of rail rates which they declare to be just and reasonable.

2. Never since the effective date of the present Act have the revenues of the carriers subject to the act, either as a whole or by regions, been sufficient to give a return of 5 3/4 per cent on the property devoted to transportation.

3. The commission has jurisdiction over joint rail and water rates between points within the continental United States.

4. The commission has control over intrastate rates where they adversely affect interstate rates.

5. The commission has the right to recognize joint routes in connection with Canadian lines and water routes in connection therewith, and of course, has power to reject such routes and the tariffs issued in accordance therewith.

6. The commission is not in any way subject to the shipping board, but is empowered to give consideration to suggestions made by the shipping board, but without obligation to put them into effect.

7. The commission has no control over the port to port rates on the Great Lakes, rivers of the United States, or as to coastal or inter-coastal rates, but the commission is advised formally that it is the policy of Congress to maintain both rail and water carriers in "full vigor" and from this it seems clear that Congress intended that the I. C. C. should have full discretion in all matters relating to interstate transportation; and that the commission should enter actively into the status of the water lines, as well as of the rail lines, and act in an advisory way as to the all-water rates which otherwise might get down so low as to detract from the "vigor" of the all-rail lines.

8. That many of the rail lines are adversely affected

by the present rates and by Panama canal competition and this has to my mind been clearly demonstrated by the recent hearings before the commission, and the data filed by the western lines.

The remedy which I propose must, to some extent, find its support in public opinion especially from this section of the country rather than in new laws.

First—I propose that the commission shall establish to and from the Pacific coast and in the western states generally, a scale of rates inbound and outbound and within the territory which in the opinion of the traffic experts of the commission staff and of the railroads will be reasonably certain to bring a net operating income equal to 5 3/4 per cent on the property devoted to transportation. This is the first obligation and should be first accomplished.

Second—That after an investigation, the commission shall fix the scale of rates applicable by joint rail and water service, which in the opinion of the commission will fairly apportion to the said rail and water routes, a proper share of the traffic.

Third—That after obtaining accurate reports of the traffic handled by the all-water lines from port to port and after conferences with the officials of said water lines, the commission shall promulgate for the information of the public, a relative scale of rates on the traffic which is competitive with the all-rail, or the joint rail and water lines, to and from points in continental United States, but that as to traffic which has been solely created by the port to port service and cannot properly be called competitive with the all-rail or joint rail and water routes, the commission shall not publish any approved scale of rates.

Fourth—The relative scale of rates above provided for shall be promulgated in such way as to give, in the opinion of the commission, all the necessary publicity thereof to the shipping public, and to all carriers interested, and shall be so adjusted as to give to the all-water lines a fair proportion of the through competitive traffic after making allowance for all cargo not competitive, but accessible, to the all-water carriers.

"Although the law does not give to the Interstate Commerce Commission the power to regulate port to port rates or regulations, including traffic handled within the switching district of any port, it does give the commission power to take advantage of the exception to the fourth section of the Interstate Commerce Act, commonly known as the 'long and short haul provision' and thereby give relief to the carriers subject to the Act from the operation of Section 4—and it is part of this proposal that the commission shall establish a continuous supervision over the traffic handled by the all-water lines, and wherever there is any indication that the water lines are handling an undue proportion of the competitive traffic, the commission shall handle the situation in friendly conference with the water lines and failing to secure any satisfactory result, shall promptly authorize the all-rail carriers and the joint rail and water carriers under its jurisdiction to meet on short notice, by appropriate tariff publication, the all-water rates, simultaneously giving relief from the fourth section to the extent rendered necessary by such authorization.

"If and when the all-water lines give notice of their purpose to advance their rates, the commission should then authorize an advance in the all-rail and joint rail and water rates relatively, without waiting for any submittal by the rail carriers or joint rail and water carriers provided for by Paragraph 2, Section 4, of the Interstate Commerce Act.

"I believe this plan would be successful in maintaining active competition by all routes. Furthermore, it would remove the discrimination now existing against the middle west and which always will prevail if the present lack of supervision continues."

F. W. Sargent Opposes Potter Plan

Cross-examination of railroad witnesses continues at western rate hearing in Chicago

FRED W. SARGENT, president of the Chicago & North Western, testified in opposition to the Potter plan for pooling the freight revenues of the railroads while under cross-examination at the hearing before the Interstate Commerce Commission at Chicago on the petition of western carriers for a 5 per cent increase in freight rates, declaring that the plan is very unfair, that it would mean that the stronger roads would be making profits for the weaker ones, and that the stockholders of prosperous roads would donate revenues for roads that might be suffering from inefficient management. He also said that it is an injustice to the shippers for them to pay an increase in rates which would be contributed to a pool to be drawn upon for the benefit of shippers in another locality, where intrastate rates are not up to the general level. He forecast serious accounting complications in the Potter plan, stating that it was impractical to keep track of a gross income and trace through the 5 per cent increase on separate commodities. The plan, he said, is one that would place a premium on inefficiency, as there would be a tendency on the part of railroad employees from the top to the bottom to say "the better showing we make the more we have to pay to the other fellow." In order to earn the 5 3/4 per cent the roads are entitled to under the Transportation Act, he said, there should be an increase in freight rates of 12 per cent.

The witness stated that if the 5 per cent increase is granted, the Chicago & North Western common stock will pay a higher dividend in about two years than the 4 per cent paid at the present time. When asked about the competition between the railroads and motor truck lines, he said that there is not enough traffic for both the railroads and the truck lines and sooner or later the shippers will decide upon transportation that is at their constant service every day of the year.

C. E. Spens Testifies

Conrad E. Spens, vice-president in charge of traffic of the Chicago, Burlington & Quincy, testified that the privately owned automobiles have taken more business from the railroads than the bus lines. As an instance to show what the railroads lose to motor buses, he said that between Monmouth, Ill., and Burlington, Ia., the Burlington sold 1,400 local tickets during the month of May, 1924, but after a hard road was finished between these two points the sales dropped to 250 local tickets a month. When representatives of the shipping interests asked the witness if the increasing traffic in automobile parts and accessories by way of railroads do not take up some of the loss sustained through active motor competition, the witness replied that although the freight was of large volume it hardly covered the loss sustained.

In answer to the question as to whether motor truck freight lines were taking much business from the roads, he explained that the truck lines are at a disadvantage as compared to the railroads as they can only carry certain kinds of freight although they have lower rates than the railroads and as a result the railroads get the freight the trucks are unable to handle. The only solution of the problem, he said, seems for the railroads to buy trucks and get in on some of the business they are losing as they cannot regain this business by reducing freight rates.

R. H. Aishton Testifies

R. H. Aishton, president of the American Railway Association, was cross-examined by shipping interests and in his testimony outlined the progress being made by the carriers. A summary of his cross-examination follows:

"The country would not for a minute consent to return to the prewar and wartime transportation conditions. The United States is now enjoying the best transportation service it has ever had. The present peak of efficient and economical railway operation is due in considerable part to the vast capital expenditures the railways have made to produce this result. In the past three years the carriers have spent \$905,000,000 for new freight cars, \$353,000,000 for locomotives, \$111,000,000 for passenger train cars and \$52,000,000 for other equipment, or a three-year total for equipment alone of \$1,421,000,000. In addition, there was expended during this same period a total of \$942,000,000 for additions, extensions and improvements to roadway and structures. This means a grand total of \$2,363,000,000 which has been spent on capital account by the railways of the United States in the last three years to provide the American people with adequate and efficient transportation.

"Through these expenditures the roads have put in service 8,728 new locomotives and 534,508 new freight cars between January 1, 1922, and August 1, 1925. Further, 2,760 miles of new track have been constructed in the last three years. The average tractive power per locomotive in service has been raised 9 per cent from January 1, 1922, to August 1, 1925, while in the same time the average capacity per freight car in service has been increased almost 5 per cent.

"What we have done is to buy the transportation tools needed to serve the nation. These large capital expenditures are an absolute necessity if the railways are to meet the country's demands adequately, efficiently and economically. They are an absolute necessity if the country and its business continue to grow and to demand the same high grade of service that is being furnished them today.

"It is inevitable that the country will grow. The railways must keep up. They must, for the national welfare, keep a working capital of surplus cars to take care of any sudden demands which may occur. They must replace worn-out and obsolete equipment. They must keep their facilities in readiness for any calls upon them. Realizing their responsibility and their basic importance in the national life, the railways are devoting their every effort to the end that they may serve the nation well."

David Friday Is Cross-Examined

David Friday, economist and former president of the Michigan Agricultural College, was cross-examined on agricultural conditions. A summary of his cross-examination follows:

"You cannot legislate a fact. The agricultural depression mentioned in the Hoch-Smith Bill does not now exist. That there was economic distress in agriculture during the post-war period of deflation cannot be denied. But this condition in general no longer holds true. The cotton grower got \$1,500,000,000 for his lint in 1924 and he could buy far more with this money than he could buy with his product in an average pre-war year. The sheep grower was far better off in 1924 than in any pre-war year. Likewise the wheat grower found his position as a purchaser restored.

"This year the cycle is being completed and for the 12 months from July, 1925, to July, 1926, cattle will bring the grower twice as much as he got in the highest pre-war year. I believe that range cattle prices will be high this year and will remain high for at least six years to come. There are at least six years of prosperity ahead for the cattle industry. I venture to predict that with the improvement in quality and good management in marketing it will be the most prosperous six years the industry has ever enjoyed.

"The principal reason for the high price of range cattle is the high price of fat cattle and this in turn is due primarily to the small supply of hogs in the country as compared with last year and two years ago. It would require a great number of beef

cattle to make up this deficiency of pork. But we haven't any more beef cattle to market this year than we had last. In fact, we have fewer. It is only natural, therefore, that both hogs and cattle be high. And it is evident that they will remain high for some time."

H. W. Moorhouse Takes Stand

H. W. Moorhouse, general supervisor of the Agricultural Research Division of the Brookmire Economic Service, and formerly director of economic research of the American Farm Bureau Federation, was placed on the stand after Dr. Friday. Dr. Moorhouse, in his cross-examination, discussed a number of statistical exhibits presented by him earlier in the present case with special reference to the long time trend of agricultural prices and prices of commodities in general. His exhibit showed that from 1801 to the present day agricultural prices have moved toward the general level of all commodities. In the pre-war period from 1909 to 1913, agricultural prices had reached the most favorable position in relation to all prices that they had ever enjoyed with the exception of two years during the Civil war. At the present time, in 1925, this same favorable relationship prevails. The present favorable relationship of agricultural prices to the prices of all commodities is to be considered in the light of the trend prior to the World war. The factors that worked then causing a gain in agricultural prices over other prices are operating just as strongly now. In fact, the basic influences, namely the growth of our city dwelling population which provides constantly widening markets and the slowing up of the expansion of farm land area almost to the stationary point tending to limit supplies are both in favor of the advance of the level of agricultural prices above the price level of all commodities in the future.

L. E. Wetting, manager of the Statistical bureau of the western roads, testified that the return to the western roads for the first eight months of this year was 3.62 per cent, an increase of \$20,850,000 in money over the 3.35 per cent returned for the first eight months of last year. The return for August of this year was \$7,177,000 in excess of the returns for August of last year.

Hearing Concluded

The hearing at Chicago was concluded on October 31, following the testimony of seven witnesses placed on the stand by opponents of the proposed increase. The witnesses were E. P. Miller, representing the potato shippers; John T. Horner, professor of economics at Michigan State Agricultural College; A. P. Mills, traffic manager of the Michigan Farm Bureau; J. W. Elliott, traffic manager of the American Fruit Growers, Inc.; Edward O. Schweger, a produce man of Chicago; Wallace B. Clore, of the American Fruit Growers, Inc., and Albert W. Lorch, representing a commission house.

The hearing will be reopened at Denver, Colo., on November 9, before Examiner W. H. Wagner. Subsequent hearings will be held at San Francisco on November 16 before Examiner Wagner; at Minneapolis on November 30 before Examiner J. B. Keeler; at Dallas on December 7 before Examiner Keeler, and at Kansas City on January 4 before Commissioner Aitchison.

At Denver, San Francisco, Minneapolis and Dallas witnesses will be heard for parties other than the carriers, beginning on the dates above indicated. In response to requests therefor, time will be accorded at Minneapolis for the Northern States Power Company to present testimony relating to coal rates; at Dallas for the presentation of testimony concerning the suggested establishment of a new rate group embracing certain portions of the southwest; at Kansas City for the presentation of testimony on the part of the various state commissions, and thereafter

testimony relating to lumber, coal, sand, gravel and rock, in the order named. Other parties desiring to introduce testimony at any of the above points will be heard. If the time available at other points is insufficient to receive all the testimony desired to be introduced, opportunity will be afforded to introduce further testimony at Kansas City, at which point the hearings will conclude. These hearings will be confined to the purposes outlined in the previous notices.

Two motions to dismiss the rate increase petition now are pending with the commission. John E. Benton, chief of the legal staff for the public service commissions of 15 states, filed a motion on October 30, and Fred S. Jackson, of Topeka, Kan., attorney for the Federated Farm Group, presented a similar motion in the name of farmers in the western territory on the following day. Both of these motions declare that the rate case is not lawfully within the jurisdiction of the Interstate Commerce Commission, pending the investigation of agricultural depression under the terms of the Hoch-Smith resolution.

A proposal in opposition to a flat increase of 5 per cent was filed by R. T. Roosevelt and T. A. Hamilton, representing \$300,000,000 worth of securities in northwest trunk lines. The proposal directs the commission's attention to the claim that the northwestern trunk lines are operating now at freight rates 14 per cent lower than roads in other sections of the west.

Wheat from 837 Acres Loaded in Five Cars

THE five 140,000-lb. capacity automobile box cars shown in the photograph contain a total of 753,900 lb. of wheat, or an average of 150,780 lb. The cars were loaded on the Great Northern during this year's wheat movement and the 12,565 bu. of wheat in the cars is equivalent to the yield from 837 acres, figuring 15 bu. to the acre as an average yield. The picture shows the cars at Grand Forks, N. Dak.

Car 39195, which was loaded by the Equity Elevator &



Great Northern Cars Loaded Above Marked Capacity

Trading Co., Kelso, N. Dak., for shipment to Minneapolis, Minn., contained 151,620 lb. of wheat or 2,527 bu. Car 39196, loaded by the Elk Valley Farmers' Elevator Company at Larimore, N. Dak., and assigned to Duluth, Minn., contained 151,320 lb. or 2,522 bu. Car 39197, loaded by C. H. Doyon, Doyon, N. Dak., also for Duluth, had 154,020 lb., or 2,567 bu. Car 39198, loaded by the Doyon Farmers' Co-operative Elevator Company, Doyon, for shipment to Duluth, contained 154,080 lb., or 2,568 bu., while Car 39199, loaded by the State Mill and Elevator at Grand Forks, N. Dak., for Minneapolis, contained 142,860 lb., or 2,381 bu.

Rustproofing of Steel Materials*

Corrosion resisting property of copper bearing steel substantiated by tests—Economies effected by arresting corrosion

By Dr. M. E. McDonnell

Chief Chemist, Pennsylvania System, Altoona, Pa.

THE research department of the Pennsylvania System has been actively studying rust and corrosion for years, and the protective measures suggested by experiment have been applied on a broad scale by the management. This would, therefore, appear to be an opportune time to review what has been accomplished.

In considering the effect of the destruction of steel due to rust, it should be remembered that the loss of 1,000 tons of steel gives a depletion to our national resources

In nature the metals usually used for structural purposes normally occur as compounds such as oxides or sulphides, and not in the free metallic state. Through metallurgical operations of an artificial character, involving high temperatures and reducing atmospheres, the metals are obtained. Under the influences of nature these metals normally revert to the same type of compounds from which they originated. The structural materials used by the engineer are not in equilibrium and all of them are under a potential pressure to revert to a balanced state. This change of state is commonly termed corrosion. The mechanical engineer must ever bear in mind this corrosive force in the selection of his materials, as well as their subsequent protection.

Engineers now know that commercial steel on the market varies greatly in its tendency to rust. As previously stated, we have made many tests for the purpose of developing resistance to corrosion. On August 1, 1912, we exposed 15 weighed commercial steel sheets on the roof of the locomotive test plant in Altoona. These sheets were carefully analyzed and on February 13, 1913, after six and one-half months' exposure, they were wire-brushed and reweighed. It was found that the rate of rusting varied much, the minimum loss being 30.12 grams, and the maximum loss 84 grams on the two sides of a square foot of the various sheets undergoing test. The results are shown in Fig. 1, and it is to be especially noted that the sheets showing the lowest losses in weight, contained copper. The curve on the plot shows the copper content. This heretofore unpublished chart was prepared in 1915 and it was largely instrumental in bringing about the decision of the Pennsylvania management to adopt copper bearing steel for car roofs.

Test Determining the Life of Sheet Steel

A more vivid illustration of the variation of the durability of steel is the progress of failure of a lot of 258 16-gage and 230 22-gage sheets of plain carbon and copper bearing steel, which was exposed for test purposes in Pittsburgh, Pa., on December 12, 1916, by a committee of the American Society for Testing Materials, of which I was a member. After 16 months' exposure of the sheets some of them contained holes or ragged edges. The records show that 30 22-gage plain carbon sheets failed in 16 months, while no copper bearing sheets failed in that length of time. After 28 months' exposure some of the panels had turned entirely to rust. The number of 22-gage plain carbon failures had increased to 77, this being more than 92 per cent of this class of sheets. During the same period only six 22-gage copper bearing sheets had failed, and it should be stated that none of them contained manganese. Fig. 2 shows the racks after 75 months' exposure. Many gaps are shown from which entire sheets of plain carbon steel had disappeared as rust, in which the oxide may have been associated with some sulphate of iron. At the end of that period every plain carbon steel sheet had failed, while 13 copper bearing 22-gage sheets were free

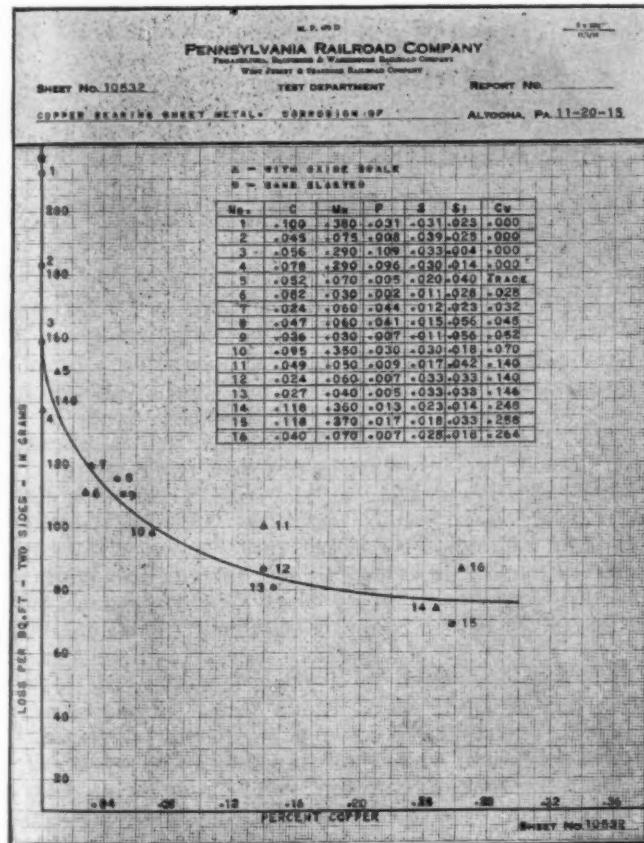


Fig. 1—Variations in the Rate of Corrosion of Steel

equivalent to 2,000 tons of ore, 4,000 tons of coal, more than 500 tons of limestone, together with losses of magnesite, chromite, manganese, etc., and that even now most of our manganese ore and some iron ore are being imported. The labor required in assembling these involves a large number of man-hours. Also consideration of the loss due to rust cannot be confined to our material welfare. Rust and corrosion frequently impair the strength of structures, thereby endangering lives.

*Abstract of a paper presented before the regional meeting of the American Society of Mechanical Engineers held at Altoona, Pa., October 5, 6 and 7, 1925.

from holes or ragged edges. Also, at the end of that period, 102 of the 126 16-gage plain carbon steel sheets had failed, while there was not a single failure among the 102 16-gage copper bearing steel sheets. The average life of the copper bearing 22-gage sheets on this test was over 49 months, while the average life of the 84 plain carbon steel sheets was 23 months. The results of this test are fully recorded in the Annual Report for 1923 of the American Society for Testing Materials. Our tests of

sometimes destroyed mechanically in the removal of wet or frozen lading. The tests cited indicate that the steel now being used is more than twice as resistant to atmospheric corrosion as the steel formerly used. The various factors have been carefully considered and we shall expect a 50 per cent increase in life, due to the change from plain carbon to copper bearing steel.

There are 135,523 open all-steel freight cars on which much maintenance data are available. After they have been in service for a number of years, the sheets become thin and holes develop. When they have reached this condition it is possible to patch the failed sheets, but if this is done, the surrounding sheets are likely to fail and the cost of this kind of maintenance is likely to become excessive. When failure of sheets begins to occur due to rust, it is better to apply Class 1 repairs, which involve cutting all rivets, removing the sheets, and rebuilding the car body.

TABLE I—COST OF STEEL-CAR MAINTENANCE AS Affected BY RESISTANCE TO RUST

	Four-hopper coal car Class H2a	Two-hopper coal car Class G1a	Two-hopper coal car Class G1c	Gondola car Class Gsd	Miscellaneous hopper and gondola cars Classes Gs, G2a, H22, etc.*
Number of cars in service	34,854	30,071	6,183	22,431	41,984
Light weight of car, lb.	50,700	39,500	39,000	40,700	.....
Finished plates and shapes in a new car:					
Weight, lb.	13,293	9,292	13,124	9,675	11,346
Cost, if plain-carbon steel	\$354.79	\$248.00	\$350.28	\$258.23	\$302.83
Cost, if copper-bearing steel	377.26	263.71	372.46	274.58	322.00
Increased cost per car, using copper-bearing steel	22.47	15.71	22.18	16.35	19.17
Class 1 repairs—per car basis:					
Finished plates and shapes, lb.	10,670	7,461	11,081	7,830	9,261
Rivets, lb.	870	793	730	870	816
Gross cost of finished plates, shapes and rivets, including stores expenses:					
Plain carbon steel	\$309.80	\$225.12	\$317.74	\$252.85	\$276.37
Copper bearing steel	327.04	237.18	335.65	265.50	291.34
Credit for scrap...	38.47	27.51	39.70	29.00	33.67
Net:					
Plain carbon steel	\$271.33	\$197.61	\$278.77	\$223.85	\$242.70
Copper bearing steel	288.57	209.67	295.95	236.50	257.67
Labor directly applicable	120.35	90.10	81.48	91.30	95.81
Shop expenses directly applicable...	54.34	40.86	36.59	40.99	43.20
Total:					
Plain carbon steel	\$446.02	\$328.57	\$396.84	\$356.14	\$381.71
Copper bearing steel	463.26	340.63	414.02	368.79	396.68
Annual cost per car of Class 1 repairs to finished plates and shapes:					
Plain carbon steel car, ten-year renewal	\$44.60	\$32.86	\$39.68	\$35.61	\$38.17
Copper-bearing steel car, 15-year renewal	30.89	22.71	27.60	24.59	26.45
Saving per car per year	\$13.71	\$10.15	\$12.08	\$11.02	\$11.72
Total anticipated saving	\$477,848.34	\$305,220.65	\$74,690.64	\$247,189.62	\$491,524.48
Plain carbon steel and rivets, lb. per car per year...	1,154	827	1,181	870	1,008
Copper-bearing steel and rivets, lb. per car per year...	769	551	788	580	672
New steel saved, lb. per car per year...	385	276	393	290	336
New steel saved per year, tons	6,709	4,155	1,216	3,252	7,053
Difference in cost between carbon and copper-bearing steel for the 135,523 new cars					\$2,509,295.86
Total anticipated saving per year for the 135,523 cars, due to slower rusting of copper-bearing steel					\$1,595,401.73 { 22,383 tons of steel

* All figures in this column are average estimates.

1913, together with the obvious outcome of the A. S. T. M. Pittsburgh test, led the Pennsylvania management in 1920 to adopt copper bearing steel for all sheet steel to be used in cars.

A question which doubtless comes to mind at this point is, what will be the effect of this change in the composition of steel which was made in 1920. We do not know the answer to this question. The destruction of a car is not due entirely to rust. There is some destruction due to abrasion and wear, also to the action of acid such as may develop when wet coal is stored in cars. Car sheets are

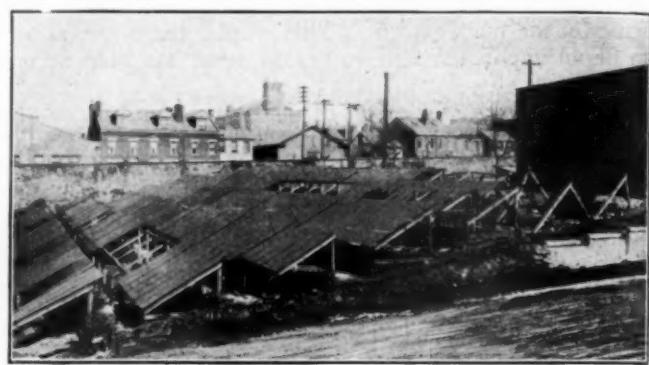


Fig. 2—Test Rack at Pittsburgh, Pa., on Which Sheets Were First Exposed Dec. 12, 1916—The Effects of Corrosion March 9, 1923

The age of the car at which this class of repairs is called for varies some, depending on the design and service. The standard four-hopper coal car designated H2a, now requires this attention after ten years of service. The two-hopper coal car of the G1 type is of slightly more rigid construction than the four-hopper car. It will run somewhat longer than ten years prior to Class 1 repairs, possibly as long as 12 years. On the other hand, on the gondola car of the Gsd type, the sheets, fail after approximately eight years' service. This rapid failure is partly due to the fact that this car does not drain and dirt accumulates in it, which when wet, accelerates rusting. We have prepared a statement (Table I) showing the cost of maintaining car bodies, in which the calculations are based on an average length of life for the plain carbon steel, which is ten years between Class 1 repairs. The results in columns one to four, inclusive, are from actual data, while those in column five are averages of the other four. The estimates of materials and cost of maintenance for copper bearing steel cars represent an anticipated 50 per cent greater durability than for the plain carbon steel cars, or a 15-year service prior to Class 1 repairs. No allowance is made for painting the cars or for any repairs to the underframes, trucks or brake equipment. The increased cost of cars due to the use of copper bearing steel is shown. This is obtained by applying the differential of \$3.00 per ton which has prevailed between plain carbon and copper bearing steel plates. This amount may diminish when the amount of copper bearing scrap now being used by the steel makers is increased. In making the calculation, allowance is made for losses in fabrication caused by shearing and punching. It is shown that the 135,523 cars involved would have cost \$2,509,295.86 more if they had been made of copper bearing steel. The statement shows the amount of new

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finished plates, shapes and rivets, as well as the cost of material and labor, including shop expenses, required to dismantle and rebuild car bodies. If these cars are given Class 1 repairs after a period of ten years, using plain carbon steel sheets, the annual cost under present market conditions amounts to approximately \$5,069,112.03. From the experimental data at hand to date, it may be assumed that with the use of copper bearing steel, the interval between Class 1 repairs will be expended over a 15-year period and repairing with copper bearing steel sheets reduces this cost to approximately \$3,473,710.30. This represents an annual saving of \$1,595,401.73, and an annual reduction of 22,385 tons in the amount of new steel required.

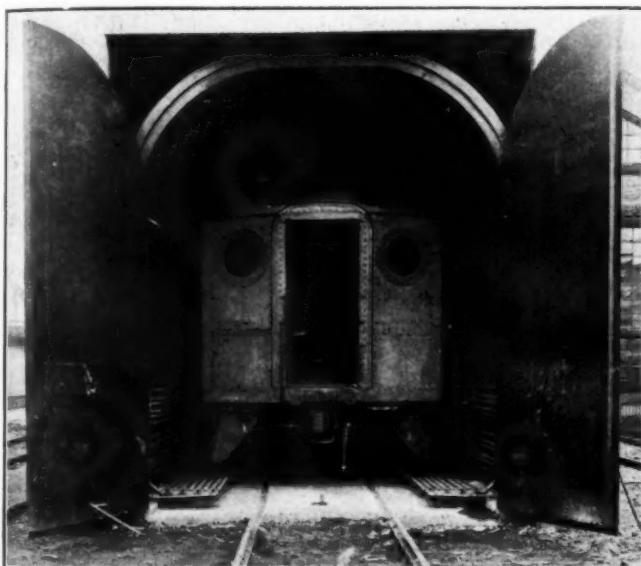


Fig. 3—Baking Ovens First Designed and Used at Altoona, Pa., 1913

Another important advantage gained by the reduced number of shopping periods is the increased number of days that the cars are serviceable. No attempt has been made to capitalize this advantage and the gain does not show in Table I. Transportation officers and shippers well know the serious consequences which may result from lack of the necessary cars to convey the commodities of a community.

Numerous other economic factors enter, which are very patent to students of political economy. The reduction in the amount of steel required, making due allowance for scrap returned to open-hearth furnaces, reduces the ore consumption some 20,000 tons, and coal consumption not far from 80,000 tons. Numerous other items conserved include chromite, magnesite, compressed oxygen gas, acetylene, fuel oil, etc. Of even greater importance is the conservation of labor, which can be diverted to other channels. They are all contributory factors to what Mr. Hoover includes under "deduction from the goods and services we might all enjoy."

Those who have had practical experience with steel may have noticed that ordinary steel forms a light brown, loose rust on oxidation, while copper bearing steel oxidizes on the surface to a dense, dark brown, adherent coating, and this is believed to act as a protective measure against rapid destruction. Other similar examples of oxidation protective coatings are well known to the engineer. A bright copper roof has a rapid initial rate of corrosion, but the green coating formed on exposure soon retards further progress. Bronze has a rapid initial rate of oxidation, but the beautiful adherent coating arrests destruction.

Zinc is very readily corroded, but the coating formed protects the base metal. In the selection of materials for engineering structures, the character of the coating formed on oxidation deserves careful consideration. Rustproofing coating may, therefore, be induced by the use of a small percentage of an element or ingredient which, on oxidation, produces a protecting film.

In the tests cited, special reference has been made to the profound influence of copper. We would not have you infer that other elements present in small quantities do not influence the rate of rusting. In the absence of copper, a high sulphur content stimulates corrosion. In the presence of copper, a small percentage of manganese improves the resistance of the protective coating formed on oxidation. The presence of chromium in steel increases its rust-resisting properties and the so-called stainless steel which is now being used for cutlery and other small parts where great rust resistance is essential contains approximately 13 per cent of chromium. However, various causes, such as the limited amount of chromium ore available, the high cost of its reduction, and the difficulties encountered in rolling stainless steel, will likely prevent its use for general structural purposes.

Designing engineers are, therefore, urged not to rely solely on physical tests when adopting specifications for steel to be purchased for structural purposes, if the material purchased is for other than temporary structures. Chemical engineers are making active search for new additions which will advance the state of the art to a still greater degree of efficiency.

Pieces of steel which are identical in chemical and

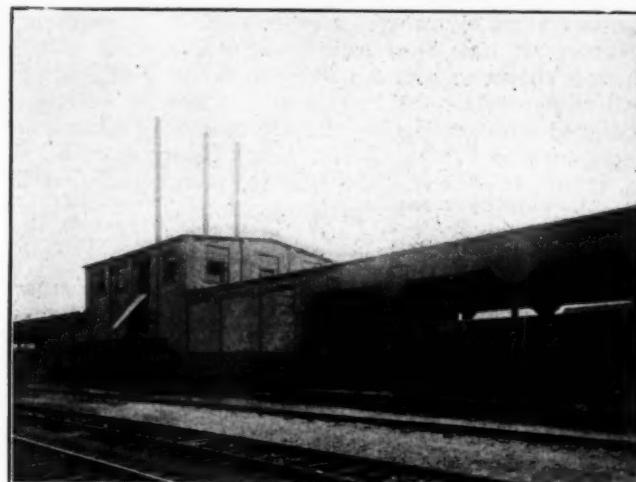


Fig. 4—Baking Ovens Located at the Pitcairn Car Shops Which Turn Out 23 Freight Cars Every 16 Hours

physical properties disintegrate at varying rates if subjected to different influences. In the absence of oxygen or free mineral acids, the rate of destruction is slow. In the presence of oxygen, some natural waters quickly form a protective coating due to the presence of salts which they carry in solution. Pure water does not form these coatings.

In the application of laboratory tests or experimental installations the results obtained apply only to the conditions under which the tests were made. It has not to our knowledge, been definitely proven that copper bearing steel has any merit in forming a protective coating on submerged structures, or for boiler tubes. Pieces of all of the sheets exposed on the Pittsburgh test rack were immersed in mine water at Calumet, Pa., in the Potomac River at Washington and in the Severn at Annapolis, but in these tests no effect could be attributed to copper.

Monel metal offers marked resistance to corrosion under normal atmospheric tests, but corrodes quickly under the electrolytic action of water.

Steel for structural work should receive a good coat of paint prior to its shipment from the factory while steel for rolling stock, if not painted, should be stored in a dry place until ready for use. The method employed by the Pennsylvania System, and we believe by numerous other concerns, is to apply a petroleum oil coating which contains resins and wax, these constituents being added to the oil for the purpose of imparting adhesive properties. On the withdrawal of the steel from storage for use, the temporary protective coating should be removed and after construction, exposed steel parts should be well painted. Durable paints should be used which contain suitable pigments, good oil and a minimum amount of drying constituents, such as a Japan drier. An excessive amount of drier shortens the life of paint as its action does not cease after the paint is dry, but leads to a premature destruction of the paint film.

Baking Paint on Passenger and Freight Cars

After considerable laboratory experimentation with baking ovens for drying paint, one was constructed at the Altoona paint shops. The first car was finished in January, 1913, and after 40 months' service the paint was in good condition. Cars painted by the baking process require class repainting every 36 months, while those painted by the air-drying process receive class repainting at intervals of 18 months. It requires 14 working days to paint a new passenger car by the air-drying process while by the baking process, all of the painting operations can be applied in six working days.

There are now three baking ovens in service. One of them is shown in Fig. 3. They are 90 ft. 3 in. long, and will accommodate the largest cars in service. They are equipped with ventilators, and are heated by steam under a pressure of 125 to 150 lb. Each oven contains 2,000 sq. ft. of radiating surface. Temperatures of 250 to 260 deg. F. are obtainable. Baking paints also the priming and surfacing coats for passenger equipment cars, are dried in three hours at these temperatures. Varnish and light colored enamels used for the final coats on passenger cars darken at high temperatures. In practice they are dried in three hours at temperatures of 150 to 160 deg. F.

In 1913, 1,100 coal cars received one coat of baking paint which contained no artificial driers. The cars were repeatedly inspected for about five years and the results obtained were so satisfactory that baking ovens were built at the Pitcairn, Pa., shops in 1923.

Fig. 4 shows the Pitcairn installation. It will be seen that it is different from the Altoona ovens previously described. There are three units over parallel tracks, each of which will accommodate three freight cars at one time. Each unit is provided with a coal-fired hot air furnace containing 40 tubes through which air is circulated by means of fans. The air to be heated is drawn from the top of the baking oven, passed through the tubes of the hot air furnace and forced back to the bottom of the ovens through suitable ducts. The circulation of the air from the ovens through the furnace is continuous. However, provision is made for a little ventilation. A vent is provided for discharging some hot air from the top of the ovens to the atmosphere and this loss is replenished with fresh air which is drawn through an intake into the plenum chamber of the fans. Thirty-two cars are now painted daily at Pitcairn. Each car receives two coats of paint, both of which are baked for two and one-half to three hours, after which the cars are stenciled. The paint is sprayed on, and two shifts of painters perform the work. It is possible, by this method, to apply two

coats of paint and stencil the cars in one full working day after the cars are delivered to the paint shed, it being understood that due to two shifts of employees, a working day is 16 hours. No artificial driers are added to the paint used.

The extension of the baking system for passenger cars to other shops has been deferred pending the outcome of tests which are being conducted with the lacquer system. The Pennsylvania System now has five passenger equipment cars and over 100 locomotives finished with lacquer. There is some trouble in finishing the interior of cars, owing to the fact that several colors are used. Another difficulty is encountered if it is desired to apply gold striping or lettering over a lacquered surface.

The progress in the development of rust preventives has been rapid during the past decade. The successful engineer must ever be alert to the end that his client may receive the benefit of the best information obtainable.

Freight Car Loading

WASHINGTON, D. C.

REVENUE freight loading of 1,121,459 cars during the week ended October 24 was the largest since the record of 1,124,436 established in the week of August 29 and exceeded the 1924 peak, which was reached in the corresponding week (October 24) by 9,114. Loadings were smaller than a year ago in the Eastern, Allegheny and Southwestern districts but the decline was slight. Loadings of grain, live stock, coal and forest products were lower than last year, but these decreases were offset by heavy loadings of l.c.l. merchandise. The summary, as compiled by the Car Service Division of the American Railway Association, follows:

REVENUE FREIGHT CAR LOADING—WEEK ENDED OCTOBER 24, 1925

Districts	1925	1924	1923
Eastern	251,220	256,284	254,439
Allegheny	213,047	215,193	214,397
Pocahontas	57,964	53,687	44,025
Southern	161,282	155,850	147,529
Northwestern	168,708	167,033	168,009
Central Western	191,521	184,537	170,954
Southwestern	77,725	80,469	74,478
Total Western	437,946	432,039	413,451
Commodities			
Grain and grain products	48,289	72,516	49,412
Live stock	41,349	42,346	43,440
Coal	189,006	194,404	195,458
Coke	13,949	9,979	12,035
Forest products	71,706	73,466	76,026
Ore	50,810	40,026	55,544
Mdse., l.c.l.	271,624	257,649	252,563
Miscellaneous	434,726	422,667	389,363
Total	1,121,459	1,113,053	1,073,841
October 17	1,106,114	1,102,300	1,073,095
October 10	1,106,099	1,088,956	1,085,938
October 3	1,112,463	1,077,748	1,079,776
September 26	1,120,645	1,087,954	1,097,493
Cumulative total 43 weeks	42,283,060	40,084,000	41,615,889

Car Loading in Canada

Revenue car loadings in Canada for the week ended October 24 totalled 76,597 cars, reaching a new high record and exceeding the record made during the week ended September 26 by 158 cars. Grain loading improved somewhat while most of the other commodities showed large increases.

Commodities	Total for Canada			Cumulative totals to date	
	Oct. 24,	Oct. 17,	Oct. 25,	1925	1924
Grain and grain products	18,401	17,056	20,427	333,484	364,971
Live stock	3,237	3,426	3,027	101,510	97,609
Coal	8,159	7,407	7,066	172,985	223,685
Coke	435	331	240	12,251	9,840
Lumber	3,640	3,507	3,485	153,091	154,663
Pulp wood	1,316	1,363	1,348	112,900	111,874
Pulp and paper	2,160	1,981	1,963	86,977	84,194
Other forest products	2,995	2,866	2,667	120,680	110,700
Ore	1,719	1,776	1,221	60,474	54,200
Merchandise l. c. l.	16,620	16,571	15,912	654,356	625,840
Miscellaneous	17,915	17,332	16,466	548,142	521,633
Total cars loaded	76,597	73,616	73,822	2,356,850	2,359,209
Total cars received from connections	35,279	34,514	32,816	1,422,185	1,354,249

S. M. Felton Elected Chairman of Great Western

Colonel N. L. Howard, general manager of Chicago Union Station Company, his successor as president

SAMUEL M. FELTON, president of the Chicago Great Western since 1909, was elected chairman of the board of directors, a newly created position, at a meeting of the directors in Chicago on November 2. Colonel N. L. Howard, general manager of the Chicago Union Station Company, and formerly superintendent of transportation of the Chicago, Burlington & Quincy, was elected president to succeed Mr. Felton. W. G. Lerch,

Western, Mr. Felton will retain his active interest in its affairs, but will be afforded more time for personal affairs.

Mr. Felton took over the management of the Great Western in August, 1909, when a reorganization terminated the one-year receivership of the property. Evidence of the manner in which he has built up its traffic and kept it abreast of its competitors, is shown by the fact that the ton-miles of revenue freight handled on the



Samuel M. Felton



Col. H. L. Howard

assistant to the president and secretary, was elected vice-president and secretary.

The election of Mr. Felton as chairman of the board of directors, with his consequent withdrawal from active management of the Great Western, was a result of his earnest wish to be relieved of his pressing responsibilities as president of this property so that he might have more leisure and be able to devote more time to active participation in the affairs of several associations of railways. In addition to his connection with the Great Western, Mr. Felton is president of the Western Railroad Association, chairman of the Western Association of Railway Executives, chairman of the Chicago Presidents' Conference, a member of the executive committee of the Association of Railway Executives, and a member and former chairman of the Western Presidents' Conference Committee on Public Relations. As chairman of the board of the Great

Great Western increased from 900,328,912 ton-miles in 1909 to 1,944,028,953, or well over 100 per cent. Of four of its immediate competitors, two showed a slightly greater increase in revenue ton-miles over the same period, and two showed a smaller increase. Gross earnings have likewise increased, these being \$8,107,289 in 1909, and \$24,726,678 in 1924. It is interesting to note also, that taxes have increased from \$226,344 in 1909 to \$945,933 in 1924. These increases have been brought about with a negligible increase in mileage.

When Mr. Felton took over the presidency of the Great Western he interrupted a program of second track construction and inaugurated a policy of using the existing facilities to the fullest possible capacity. In carrying out this policy the Great Western increased its average revenue train load from 382 tons in 1910 to 632 tons in 1924.

Operating economies have been introduced in all de-

partments. For example, the cost of maintaining freight locomotives per locomotive mile was reduced from 34.78 cents in 1923 to 29.54 cents in 1924, or 15.07 per cent. Fuel saving campaigns, which the Great Western has undertaken aggressively, resulted in the reduction in the pounds of coal consumed per 1,000 gross ton-miles from 169.2 in 1923 to 152.9 in 1924, the estimated saving aggregating \$226,253. Charges to loss and damage to freight were 16.08 per cent less last year than in 1923 and payments for personal injury claims, 20.01 per cent less. Operating efficiency has also improved from year to year. The average movement per car per day in 1924 was 40.3 miles, an increase of 67.92 per cent over 1920. Freight locomotives in 1924 made an average of 81 miles per day and passenger locomotives, 157.3 miles per day. This use of its old equipment to full capacity has enabled the Great Western to meet its requirements without the purchase of new equipment. It is interesting to note that no road locomotives have been purchased since 1920 and no freight cars since 1923.

The Great Western is handicapped with respect to its physical position. It is generally the long line between its principal termini, Chicago, Minneapolis, St. Paul, Omaha and Kansas City. It is therefore handicapped in its bid for through freight traffic and for through passenger traffic. Its freight traffic is well diversified, its products from manufacturers and miscellaneous products representing 29.6 per cent of its total tonnage in 1924, products of agriculture, 25.8 per cent, products of mines, 24 per cent, products of animals, 9.5 per cent and products of forests, 7.4 per cent.

Net operating income in 1924 was \$3,538,480, an increase of more than \$100,000 over 1923, and a vast improvement over the results in 1920 when there was a deficit of \$3,429,543. The net income after fixed charges in 1924 was \$601,557.90, the best since 1917. The net operating income this year will probably not exceed that for 1924 although the improvement in business since the first of July is steadily overcoming the handicap of the operating deficit incurred in the first six months of the year. The increase in net operating income last year was not due to an increase in business, since operating revenue declined from \$25,723,707 to \$24,726,678. It was due to operating economies brought about by the efficient manner in which the railroad has been operated. Furthermore, the operating revenues of the Great Western are less this year than they were last year, this condition being a common one among the railroads in the northwest. It is plain that, while the Great Western has been able to show great ability in reducing its expenses to a minimum, the future of the company will not be assured until the fundamental conditions against which all western railways are contending are corrected.

The Great Western's loss in passenger revenue has been particularly severe. Passenger revenue declined from \$4,277,383 in 1923 to \$3,909,609 last year. Competition from automobiles and busses, severely felt by all roads, has hit the Great Western particularly hard on account of the location of its lines and its limited through service. Over 70 per cent of the passenger revenue is derived from local and short haul traffic and it is principally this class of travel that has been diverted to the highway carriers. Mr. Felton has shown initiative in meeting this competition and has been a leader in the use of gasoline motor trains in place of steam trains.

While increasing his road's business in general, Mr. Felton has shown ingenuity in keeping operating expenses to a minimum and he has been successful in this in spite of many handicaps. He turns over the active management of the road to Colonel Howard at a time when its future seems brighter than it has for a number of years. There are evidences that the agricultural depression is dis-

appearing. There is also the expectation that the Great Western, in common with other roads, will be given relief in the form of increases in freight rates and permission from the Interstate Commerce Commission to take such steps as are necessary to meet the Panama canal competition.

Mr. Felton's long railway career is one of the widest experience. Born at Philadelphia, Pa., on February 3, 1853, he entered railway service in August, 1868, as a rodman on the Chester Creek railroad. Continuing his work as an engineer, he was later promoted to leveler and assistant engineer and engineer in charge of surveys and in 1873 was appointed chief engineer of the Chester & Delaware. Mr. Felton entered the operating department in August, 1874, when at the age of 21 he was appointed general superintendent of the Pittsburgh, Cincinnati & St. Louis, now a part of the Pennsylvania. In September, 1881, his jurisdiction was extended over the Little Miami and the Cincinnati & Muskingum Valley railroads. He was appointed general manager of the New York & New England in January, 1882, and was promoted to assistant to the president in February, 1884. In November, 1885, he went to the New York, Lake Erie & Western as vice-president in charge of the traffic department, resigning in November, 1890, to become president of the East Tennessee, Virginia & Georgia. This change marked the beginning of his career as a "doctor of sick railroads." He was elected president of the Cincinnati, New Orleans & Texas Pacific, now a part of the Southern, in November, 1890, and was appointed receiver of the road in March, 1893. In November, 1895, he was elected also president of the Alabama Great Southern. He was also receiver of the Columbus, Sandusky & Hocking from June, 1897, to September, 1899. Mr. Felton's close association with the late E. H. Harriman led, in September, 1899, to his election as president of the Chicago & Alton, with which road he remained until December, 1907. At that time he was elected president of the Mexican Central, remaining for two years until April, 1909, when he was elected chairman of the board of directors of the Tennessee Central.

Mr. Felton became connected with the Chicago Great Western in August, 1909, when he was elected president. He has held that position continuously until his present election as chairman of the board of directors, but has engaged in many other interesting activities in addition. From September, 1912, to August, 1914, he was receiver of the Pere Marquette, being also president of the corporation from January, 1913, to June, 1914. Mr. Felton was elected president of the Western Railroad Association in 1913, and has held that position up to the present time.

Mr. Felton's military service, which brought him the distinguished service medal, the first ever bestowed upon a civilian, began in June, 1916, when he was selected on the recommendation of a committee representing five national engineering societies to take charge of the work of assembling men and materials for possible railway operations in connection with the expedition into Mexico, including the problem of taking over and operating the Mexican railroads if necessary. In this capacity he served as consulting engineer and railway adviser to General Black, chief of engineers of the United States Army. After the entrance of the United States into the World War, Mr. Felton sent a railway commission to Europe to investigate transportation conditions there while he took charge of the organization of the first nine railway regiments, the recruiting of which was begun within a month after the declaration of war. When it became apparent that a separate organization must be created within the engineering department to handle the transportation problem, the office of director-general of military railways was established in July, 1917, and Mr. Felton was appointed

to that position by the secretary of war. He was then involved, not only in organizing, equipping and training railway troops for the construction, maintenance and operation of standard and narrow gage roads necessary for the supply of the armies in France, but also in purchasing, inspection and shipment of the immense quantities of railway materials and equipment necessary for the development of adequate port facilities, the construction of new lines and their operation. Mr. Felton was so successful in the administration of this work that while he refused a commission in the army, he received in addition to the distinguished service medal of the United States, the honor of rank as a commander in the Legion of Honor of France.

From May 23, 1918, to February 15, 1919, Mr. Felton served as vice-chairman of the Port and Harbor Facilities Commission of the United States Shipping Board, but he had expressed the desire to return to the active administration of the Chicago Great Western and he resumed his duties as president in January, 1919. He did not sever his connection with the Shipping Board, however, serving as acting chairman of the Port and Harbor Facilities Commission from January 11, 1919, to March 1, 1920.

As chairman of the Presidents' Conference Committee on Public Relations of the Western Railways, which position he held until about a year ago, Mr. Felton led the campaign of the western railways to put themselves in the right light before the public and to correct the impression caused by the misstatements of radical politicians regarding railway management and the Transportation Act. Mr. Felton was insistent that none of their charges should go unanswered and aggressively attacked them at all times. He has always taken an active part in the affairs of the Association of Railway Executives, of whose executive committee he is a member.

Colonel Howard of the Younger Generation

Colonel Howard is of the younger group of railway executives. Only 41 years of age, he is one of the youngest, if not the youngest, president of a Class I railroad in the United States. Educated as an engineer, he early was transferred to the transportation department in which he has remained up to the present time. He was born on March 9, 1884, at Fairfield, Ia., and received his engineering education at the United States Military Academy at West Point, N. Y., from which he graduated in 1907. In September of that year he entered railway service as a civil engineer on the Chicago, Burlington & Quincy, later being promoted to trainmaster. Subsequent promotions took Mr. Howard through the grades of assistant superintendent and division superintendent, in which capacities he served on both the Burlington and Hannibal divisions. He entered the United States Army in May, 1917, receiving a commission as lieutenant colonel of the Thirteenth Railway Engineers and from August, 1917, to the spring of 1918 he was on duty with the director general of transportation in France. He was later placed in command of the Thirteenth Railway Engineers and was promoted to the rank of colonel in July, 1918. Mr. Howard was mustered out of the army in May, 1919, and returned to railway service as assistant to the federal manager of the Chicago, Burlington & Quincy. In November, 1919, he was promoted to general superintendent of the Missouri district at St. Louis, Mo. He remained there until July, 1923, when he was promoted to superintendent of transportation, with headquarters at Chicago. Mr. Howard was appointed general manager of the Chicago Union Station Company in August, 1924, and he held that position until his recent election as president of the Chicago Great Western.

New York State to Spend Millions on Grade Crossings

WHAT is known as the Grade Crossing Elimination Amendment to the New York State Constitution, approved by the people by majority vote on November 3, provides that "the legislature may authorize by law the creation of a debt or debts of the state, not exceeding in the aggregate three hundred million dollars, to provide moneys for the elimination, under state supervision, of railroad crossings at grade within the state."

Unless and until the legislature sets up the necessary machinery for the purpose no part of the moneys authorized to be raised by the sale of bonds can be expended and the manner and method of the eliminations of crossings and the general machinery in connection therewith will be a matter for the legislature to decide; except as to how the expense of the elimination is to be divided, which is fixed in the amendment to the constitution (one-half to be paid by the railroad, one-fourth by the state, and one-fourth by the city or town).

A legislative committee headed by the chairman of the Senate finance and the Assembly ways and means committees has been in consultation with railroad officers and engineers ever since the adjournment of the last legislature studying the crossing problem and a survey has been made showing the total number in the state and those which are deemed to be in immediate need of elimination. It is not altogether improbable that the legislature may set up a special commission to have charge of grade crossing elimination, and give to that commission discretionary powers; so that a municipality which by reason of already being bonded to its debt limit, or a railroad company financially unable to do so, might be relieved from compulsory elimination. Such a proposition is the more probable in view of the fact that Eberly Hutchinson, chairman of the Assembly ways and means committee, is an engineer of experience.

Shortly before election it was held, in an official opinion of Attorney General Albert W. Ottinger, that once the legislature, or its agent created for that purpose, had ordered a grade crossing elimination, the share of the elimination to be borne by the municipality would immediately become a lien against the borrowing power of such municipality under the 10 per cent debt limit provisions of the constitution. It was also shown by figures submitted by the State comptroller that a considerable number of cities are now so close to the constitutional debt limit that the arbitrary imposition of additional obligations upon them might seriously impair their ability to build school houses, sewers and other essential structures or institutions.

The legislature will probably prescribe a plan of crossing elimination giving to municipalities an opportunity to be heard before any elimination is ordered, with the right of appeal to the courts if their constitutional debt limit would be impaired.

No bonds will be sold under the amendment until after eliminations have been specifically ordered, the plans drawn and approved, the contracts let and the money is needed. It is anticipated that the program of elimination will cover a period of from 10 to 20 years and not much more than a preliminary start can be expected during 1926. Neither is it certain that the amendment will not be attacked as unconstitutional in that it permits the legislature to mandatorily impose exorbitant debts upon municipalities. The legislature has the power to exact security from a railroad company, before advancing its share of an elimination project.

Annual Meeting of Short Line Association

Amendment of law relating to consolidation and recapture urged

THE three-day annual convention of the American Short Line Railroad Association was begun at the Royal Palm Hotel here on November 4. Approximately 260 officials of short line railroads and members of their families are in attendance, nearly 200 having arrived here on the morning of November 4 in a special train made up at Jacksonville on Monday, of cars in which they had arrived from Chicago, Washington, Atlanta and other points. The program includes a complete tour of the state and of Cuba, going south via the Florida East Coast and its overseas extension to Key West, and returning via the Seaboard Air Line and its new Florida lines through the central and western part of the state. At Key West the party will leave the train for a trip to Cuba, including a ride over lines of the United Railways. The itinerary includes short stops at the chief points of interest, aside from the three days at Miami, and local entertainments and sight-seeing trips arranged by local chambers of commerce and other organizations, which afford an excellent opportunity to observe the remarkable development now going on in Florida.

Bird M. Robinson, president of the association, presided at the meeting, which he opened by reading his annual report. In this he reviewed some of the principal problems faced by the short line railroads and urged amendments of the provisions of the Transportation Act relating to consolidation and recapture of excess earnings. An abstract of the president's report follows:

Consolidation of Roads

Relieved, as they have been, of the immediate danger of government ownership, the owners of the roads, especially of the short lines, are now confronted with the alternative of either causing their roads to be merged or consolidated into one of the limited number of competitive systems about to be created under the provisions of the Transportation Act, or of retaining them and incurring the resultant risk of loss of traffic and revenue.

In my opinion the consolidation of all of the roads into a limited number of systems constitutes the most important problem that confronts the railroads as a whole especially the short lines, and it is all the more serious because, from the very nature of conditions at this time, it is inevitable.

We have in this country more than 250,000 miles of steam railroads. That very large mileage was constructed by substantially more than six thousand separate companies, and under almost every conceivable condition. Necessarily there was a great difference between the physical condition and facilities of the various roads, as well as the volume of traffic and cost of rendering transportation service. There was an equally great difference in the rates charged for transportation services.

The process of creating systems by one road acquiring another began soon after the building of roads became general, and competition between such systems developed to an extent, and practices were put into effect that became a menace, not only to the system engaged therein, but to other roads and to the public interest.

In addition to the inherent difficulty of making different rates for different roads, the commission has found it impossible, under the law, to make rates that will be compensatory to all of the roads. It divided the country into a limited number of large districts, for rate-making purposes, and the rates made for each district or group of roads, for various classes or commodities, are effective generally on all the roads located therein.

That governmental action limits the making of different rates on different roads. It ignores, to a great extent, the difference

in physical conditions, volume of traffic and cost of the service, and makes it certain that some roads will earn too much, and that others will earn too little.

The public may be said to be chronic in its demands for lower rates, and it has been vociferous in its efforts to accomplish that end. It has protested and protested that the roads were earning too much, and has always attempted to prove its contentions by pointing to the earnings of a few of the strongest systems, ignoring the very large number of roads that were not earning enough to meet their transportation obligations. This very definite objection to paying rates that would be remunerative to each road, rendering it service, has dominated the various commissions to the extent that they have forced rates that are inadequate for many roads, and almost confiscatory for others. In other words, to prevent some roads from earning too much, they have forced a large number of other roads to accept rates that return less than the cost of the service. In this way, the public receives the benefit of the lowest rate possible; the strong roads are protected, and the weak roads are left to shift for themselves, and grow weaker.

For the purpose of protecting the broad public interest in all of the railroads, not only the strong, but the short and weak, and for the express purpose of preserving for the public the railroads as a whole, Congress prepared and passed the transportation act. A number of the provisions of that act were intended to aid and protect the weak and short lines. There were two major or outstanding provisions having that object in view.

Acting under the provisions of section 15-a, the commission fixed a value of all the railroads, including the value of the weak and short lines, and made rates based upon that value, which it determined would produce for all roads the fair return authorized by Congress.

The rates thus fixed were not adequate to produce a fair return on the value of all roads. They proved to be wholly inadequate to compensate the weak and the great majority of short lines. The provision of that law authorizing a division of the revenue derived from the rates, based upon the value of all the roads, has not been made effective to the extent that it should have been, for two principal reasons, (1) that the larger and stronger lines have uniformly and vigorously contested every effort made before the commission to obtain an increase of divisions; and (2) while the commission has in a limited way exercised the authority given it to make divisions, and some benefits have resulted therefrom, it has apparently not fully comprehended the broader view and effect which Congress intended.

In view of the partial failure of that provision, it may become necessary, under conditions which are likely to develop, to appeal to Congress to so amend that part of the law that there can be no failure to understand, hence no failure to execute.

The real or ultimate remedy provided in that act for the purpose of preserving all of our railroads for the benefit of the public was the provisions authorizing and providing for the consolidation of all of the roads into a limited number of competitive systems.

When adopting that provision, Congress not only reversed public policy theretofore in effect, but it set aside the Sherman anti-trust law, and it did it for one purpose, and one purpose only; that was to aid and protect the weak and short lines by having them incorporated into the stronger lines, and in that way, not only assure to the owners thereof their constitutional rights, but to definitely preserve for the public the benefit of the transportation services rendered by such lines.

Section 5 requires the commission, after prescribed procedure, to adopt a plan for the consolidation of all the roads into a limited number of systems. The commission has devoted four or five years to a study of that problem; has announced a tentative plan, but has not adopted a final plan, for the reason, it is believed, that the problem is too complex. In the meantime, the commission and others doubt whether they have authority to approve applications for the consolidation of roads prior to the adoption of a final plan. The commission has, however, approved the merger of several roads which were acquired through the purchase of stock or lease. Aside from such mergers, little or

no real progress has been made in the steps necessary to accomplish the consolidation which Congress authorized.

The fact that the commission has not adopted a final plan, and that no consolidations have been made, has renewed the demand upon the part of some interested parties that the law be amended so as to compel consolidations. We do not believe that compulsion is necessary or that it will facilitate or promote the end Congress intended to attain.

We are of the opinion that the commission cannot successfully formulate and adopt such a comprehensive plan; in other words (practically make a map for the consolidation of all of the roads), as directed by that act, but we do believe that it can and should be amended in a way that will make it easily workable and effective. The amendments that are necessary to accomplish that are limited and simple.

First, Relieve the commission of the practically impossible duty of adopting an all-embarrassing plan, and direct it to, as expeditiously as possible, divide the country into suitable districts, and adopt a limited or skeleton plan for the merger or consolidation of the roads in each.

Second, Authorize and direct the commission to select certain of the larger and stronger systems in each of the districts, and designate them as "Group Heads," or systems into which other contiguous roads may be merged. The formal adoption of such a plan, coupled with appropriate general rules governing the merger or consolidation of other roads, will enable all concerned to proceed intelligently.

Third, Provide that any "Group Head" system may acquire by purchase, lease, or in any other lawful way, any contiguous road, subject to the approval of the commission; that approval to be based upon formal petition, and after full investigation and public hearing.

Fourth, Confer upon each and every road not designated as a "Group Head" the right to file a petition with the commission asking that it be allocated to such "Group Head" system as it may determine, and that the commission, after full investigation and public hearing, shall approve or disapprove, having in view the object Congress intended when authorizing the merger or consolidation of roads.

In the event the commission approves the application and allocates the applicant to a designated system, and that system should fail or refuse to acquire the road so allocated to it, the commission should be required to constructively consolidate it with said system, and give to the allocated road such division of the joint revenue and treat it in all other ways, as a part of the system to which it has been allocated.

Under the provisions of the law as it now exists, the commission is directed, when considering any application for merger or consolidation, to consider the value of the property of the road to be acquired, and in the final analysis it must fix or approve such value. It will be perfectly fair and consistent for the commission to determine, when necessary, the value of any road which it may allocate to another. In making such valuation the commission should, of course, give the owner thereof the benefit of the same basis of unit and going value that is accorded to all others.

This plan of authorizing the constructive consolidation of roads is strictly consistent with the right now accorded to roads seeking to acquire others, and is perfectly fair. They have the right to select any road that they desire, and ask the commission for authority to acquire it. The plan here proposed gives the owner of any road the right to petition the commission to place it in the position and condition that Congress intended it should be.

Under this plan there would be considerable liberty of action upon the part of the owners of roads. If neither the "Group Head" system nor the owners of a given road filed a petition asking that it be acquired or allocated, it would remain as a separate property, which would indicate that it could continue alone and render the public efficient service.

Recapture of Earnings

Recognizing, as Congress did when considering the transportation act, the impossibility of solving the question of the strong and weak roads, through the process of different rates on different roads, it adopted the plan of defining a fair return on the value of all railroad property held for and used in the public service; directed the commission to make rates that will earn "as nearly as may be" that return, and provided for the recapture of a part of any excess over said fair return.

Without doubt, the provision directing the commission to fix rates sufficient to enable all roads to earn a fair return, coupled with the provision for the recapture of certain funds, was intended to aid the weak and short lines, and it probably has done some good. It is generally believed that the rates fixed by the commission were higher than they otherwise would have been, and this notwithstanding they have proved to have been too low to produce a fair return. To the extent that the rates

were made higher, the weak and short lines have benefited, but the benefit to such roads has been infinitesimal, as compared to the benefit derived by the strong and prosperous roads. The recapture provision of the transportation act has been held constitutional by the Supreme Court. I am of the opinion that principle of the law has become a fixed policy of the government; and that it will be continued, at least until the great majority, if not all, of the roads have been merged or consolidated.

That part of the law is, in my opinion, unfair to the railroads in at least three important respects:

First: The test period for determining the amount of the recapture is fixed at one year. That limit is obviously too short. A very large number of roads have abnormal earnings one year and greatly reduced earnings either in the preceding or succeeding years. Under the provisions of the present law that condition is disregarded; the surplus funds are recaptured in the fat years, and such roads take the losses in the lean years.

That section of the law should be amended to the extent of fixing a test period of from three to five years, and the average annual earnings of each road, during said test period, be made the measure for determining the amount of the recapture of excess earnings.

Second: That law makes no adequate provision for the protection of roads, that for one reason or another have a limited existence. For example, roads that serve special territories, in which raw material, such as minerals, timber, etc., are produced or consumed. A very large number of such roads exist, and the recapture of what on the face of the returns appears to be surplus earnings, are in fact a partial return of the invested capital. If such funds are recaptured, the owners will find themselves with substantial losses, when the traffic is exhausted, and their road must be scrapped.

That provision of the law should be amended so as to exempt that class of roads.

Third: The funds recaptured under the provisions of the law are held by the government, and the commission is authorized to loan them to railroads for certain transportation purposes, or for the purchase of equipment to be leased to roads. The object was to aid the weak and short lines to obtain funds and facilities with which to increase their services to the public.

The object was a worthy one, but the procedure has failed utterly, first, because the funds should have been paid, not loaned, to the roads that deserved it, and second, because few, if any, of the roads to which loans were to have been made have been able to furnish the collateral security required.

The commission's records show that only about seven million dollars of recaptured funds have been paid into the Treasury, but some officials, who have made a study of the subject, estimate that at the end of this year the amount that will be due and payable, will aggregate about one hundred million dollars. The uncertainty about the amount that should be paid is caused by the fact that many of the roads have filed protests, asserting that the value of their property is greater than that fixed by the commission, hence that the demand for recapture was not justified, either in whole or in part.

The fact that funds are recaptured from any road indicates that it has under such conditions received earnings on a value in excess of the value of its own property, hence that it has had the benefit of the value of other properties. On the other hand, the road that has not been permitted to earn a fair return has been deprived to some extent of the benefit of the value of its own property.

The law should be amended, and definite provision should be made for the payment of all recaptured funds, direct to the weak and short lines in proportion to the deficit of a fair return incurred by each. In other words, the roads not earning operating expenses should be paid proportionately more than roads earning a part of a fair return. In proposing this, I recognize that there are some roads that do not render such a public service as to justify their continued existence, and the commission now has authority to issue to such roads a certificate of abandonment.

The weak and short lines are now, and will continue to be, prevented, to a material extent, from charging adequate rates to which they are legally entitled; many of them have been prevented from obtaining adequate divisions of joint rates; the consolidation of roads has been delayed, hence some action should be taken at once, as it is but fair that that class of roads should be provided with additional revenue. One thing that can be done by the government is to pay to them the recaptured funds.

Some interested parties have asserted that the payment of the recaptured funds, as here proposed, would be unconstitutional, and I assert that such is not the fact.

The Supreme Court has settled definitely that the government has the right to recapture that part of the earnings, provided for in the act. The title to such funds is vested in the government, and the road from which they are recaptured is made a

trustee thereof until paid into the treasury and vested in the government.

As I see it, there can be no question about the right of the government to use the recaptured funds as it may determine. It can either turn the funds into the Treasury for any governmental purposes, loan it to roads for transportation purposes, or pay it to roads that are a part of the transportation system of the country, to which the funds were paid for services. I am sustained in that opinion by the fact that when the transportation act was passed in 1920, it provided for the payment by the government of funds paid into its treasury by taxpayers, to railroads under Section 209; that payment was not made for war purposes. It was to reimburse the roads for any loss that they might incur during the six months following the return of the roads to their owners. The provisions for said reimbursement went so far as to include an amount for dividends equal to that each road had received during the test period fixed in the federal control act, and it included all roads, regardless of whether they had been under government control or not.

That provision of the law was enacted for the reason that the director general of railroads had greatly increased the wages of employees and other expenses, but had not increased the rates charged for transportation. A very large deficit was being incurred by the government, and it was apparent that the commission would not be able to readjust the rates for a considerable period, hence that the roads would necessarily incur losses.

That action upon the part of Congress was fully justified, and was accepted by the great majority of the roads. As I see the present situation, there is no difference in principle between what the government did then, and what I propose now. At that time it was apparent that losses *would be* incurred by all of the roads, because the government had created a condition that could not be corrected for some months, and now a large number of roads *have* incurred losses of the same character, because the government has limited and restricted their power to earn.

The last Congress gave the commission an increased appropriation for the purpose of accelerating the valuation work. For that reason, the commissioner having charge of the valuation bureau, advised us that they could not segregate the short lines, and delay serving final valuation on each, as requested in the resolution adopted at our last annual meeting. They are now serving final valuations on individual roads, rather rapidly, and it will probably not be long before that part of the work is finished.

During the last Congress many and vigorous efforts were made to amend the transportation act, and to further restrict the carriers in several important respects.

A most determined and persistent effort was made by certain national labor organizations to force Congress to pass the Howell-Barkley labor bill, which would have abolished the Labor Board and substituted in practical effect control of all carriers by said national labor organizations.

That bill, in my opinion, was one of the most nefarious ones I have ever known. One of its most objectionable provisions, affecting short lines, was that of fixing, by act of Congress, the then wages of all employees as a minimum, and providing penalties for any attempt to reduce them. It was so framed that no reduction of wages or change of rules and working conditions could be made without the consent of the employee, and he was practically placed under the domination of some national labor organization.

New Labor Bill Proposed

Judging from the discussions in Congress, when the Howell-Barkley bill was being considered, and from the attitude of labor and some of the railroads, I assume that sections of the law will be repealed, or so amended by the coming Congress, as to abolish the Labor Board. It is certain, however, that the organizations that formulated and pressed the Howell-Barkley bill, will renew their efforts to secure desired legislation on that subject, during the coming Congress. We are advised and believe that a bill, somewhat modified from the former one, is being considered, and may be introduced.

The proposed bill, if we understand it correctly, will provide for boards of adjustment, which "shall be created by agreement between any carrier or group of carriers, or the carriers as a whole, and its or their employees." Such board, when created, will have very broad powers, in dealing with disputes between the carriers and its employees. In the event there is a dispute, which is not settled by agreement, the employees can demand the establishment of an adjustment board. If the carrier does not consent, the dispute can be taken to a board of mediation, with a provision that in the end the authorities created in the bill will not only settle the dispute but create the adjustment board.

The final result of a dispute that goes through the procedure provided will be filed with the federal courts and become bind-

ing upon the carriers, but there is an express provision that nothing in the proposed act "shall be construed to require an individual employee to render labor or service without his consent, nor shall anything in this act be construed to make the quitting of his labor or service by any employee an illegal act; nor shall any court of the United States, or of any state, issue any process to compel the performance by any employee of such labor or service, without his consent."

The effect of such a law would be to freeze present wages, rules and working conditions, and insofar as the short lines are concerned, would prove to be a serious obstacle in the operation of their roads.

Motor Buses and Trucks

The decision of the Supreme Court of the United States in the case of Buck vs. Kuykendall, state director of public works of Washington, and in the case of Bush and Sons Company vs. Malloy Public Service Commission of Maryland, involving state statutes regulating buses engaged in interstate commerce, concludes that state statutes prohibiting operation over state highways of bus lines between points in a state and points in another state, are held in violation of the commerce clause. In the Maryland case the decision related to trucks engaged in interstate commerce on highways, and was identical with that in the Washington case.

The result of these decisions has been to permit buses and trucks to engage in interstate commerce, and to operate to the extent, and as and when, they please.

Congress has not in any way provided for the regulation of that kind of vehicle so engaged, and unless it does act, a chaotic condition will quickly and certainly develop.

We are of the opinion that the present situation with respect to such uncontrolled buses and trucks is unjust both to the public, which provides the highway, and to the rail carriers that must not only maintain their own roads and continue to serve the public, regardless of all conditions, but at the same time must meet the competition of uncontrolled, and largely irresponsible companies using such vehicles.

We contemplate participating actively in an effort to secure the enactment by Congress of a law to correct the injustice now being done our members.

"Hoch-Smith" Resolution

The most important affirmative action by the last Congress with respect to the carriers was the adoption of the so-called "Hoch-Smith" resolution.

So far as I have been able to learn, practically all of the fully informed and experienced traffic people of the country agree definitely that there is no need or justification for such an unlimited investigation and readjustment of rates as provided for in that resolution. In addition to that fact, it is apparent to those who know, that the great majority of rates on agricultural products and livestock are not now remunerative, hence the object in view, and the order of Congress cannot in that respect be fairly and successfully accomplished.

The provisions of that resolution are such as to make prompt action by the commission, in its attempt to reduce rates on agricultural products and livestock, practically impossible. It must, if it is to do its duty, make a thorough and intelligent investigation of rates generally before it can determine whether a reduction of agricultural rates may lawfully be made effective. A thorough investigation directed by the resolution will involve millions of rates, which cannot be made in a short period, but will probably require several years, and cost both the government and the carriers a very large sum of money. In the meantime, there can hardly be an intelligent reduction in rates in favor of the special agricultural class mentioned in the resolution.

We understand that an effort will be made to repeal that resolution. We anticipate, however, that Congress will refuse, hence that the commission will proceed in its efforts to comply with its instructions. Every member of this association, and all of their rates, are directly or indirectly affected, and they should prepare to participate in the work of protecting, not only their own revenue, but that of all other carriers in which they are directly or indirectly interested.

The affairs of the association are in a healthy condition, and the organization is functioning efficiently and harmoniously. It is, in fact, better organized and equipped to serve and protect its members than at any time in its existence.

The present membership consists of 492 separate railroad companies. During the nine months ending September 30 this year, 28 new members have been secured, and 25 members have resigned or been dropped from the roll, for one reason or another. The majority of the roads that have ceased to be members have been acquired by trunk roads. While the practice is not universal, the majority of members that are thus acquired are promptly withdrawn by their new owners.

George A. Post Dies Suddenly

Railway supply leader—Organizer and first president of Railway Business Association

GEORGE ADAMS POST, president of the George A. Post Company, chairman of the Railroad Committee of the Chamber of Commerce of the United States and president of the Hudson River Bridge & Terminal Association, died on the evening of October 31 of heart failure as he sat in the library of his home in Somerville, N. J.

Mr. Post occupied a position of leadership in the railway supply field for many years. He became associated with that industry in 1892 when he was made a vice-president of the Standard Coupler Company, to the presidency of which company he succeeded two years later. Prior to his affiliation with the railway supply field, he had had a brief career in railroad service, in politics and in newspaper work. When but 22 he was elected mayor of Susquehanna, Pa., and at 28 he was elected to Congress. He was president of the Railway Supply Manufacturers' Association in 1904. He served as chairman of the American Railway Appliance Exhibition held in connection with the meeting of the International Railway Congress at Washington, D. C., in 1905. Mr. Post was, however, best known to the railway world and railway supply industries for his activity in the Railway Business Association, in the organization of which in 1908 he played a leading part, and of which he was president from its inception until 1918.

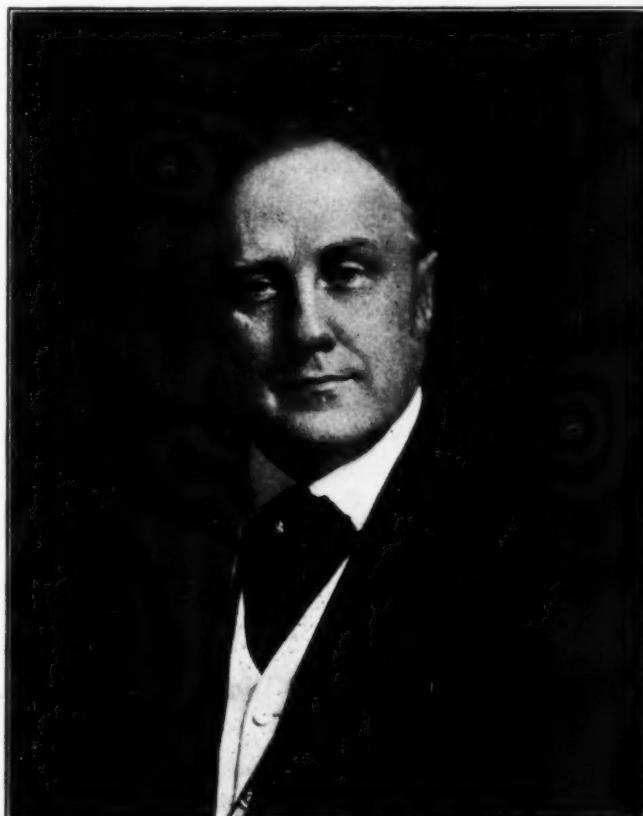
The railway supply industry last week lost two of its outstanding figures, George M. Basford, who died suddenly on Monday, and George A. Post, who died suddenly on Saturday. It is significant of the life each of these men led that both of them passed away while in harness. Both had had the good fortune before they died to see accepted and put into practice many of the theories they had advocated. Neither probably was satisfied. They were not of the sort who would be, because each very likely felt that the work in hand was but in its beginnings. Mr. Basford's leadership in the railway and railway supply fields was due to his activity primarily in personnel and engineering problems. In his later years, his energy was chiefly devoted to the advocacy of improved motive power utilization.

Mr. Post's activity followed along quite different lines. It was rather on the economic side, with particular reference to railway regulation and the public's attitude towards railroads. The two men came closely together in the work of organizing the Railway Business Association, Mr. Post being the organization's first president and Mr. Basford having been assigned by his superior, Waldo H.

Marshall, president of the American Locomotive Company, to assist. As time goes on, the two men will be seen to have worked more closely together in most of their activity than either of them may have realized. Lately, there has been recognition that favorable public opinion which Mr. Post worked so hard to cultivate depends on no factor more important than service and efficiency. Mr. Post always took the view that no small part of railway efficiency could be credited to the appliances made available to the railways by the railway supply concerns. The railways today have a favorable public opinion. There is much commendatory comment in the public press and elsewhere about railway efficiency. Is it by chance that when observers speak of this efficiency they quote the figures of more tons per train, more locomotive miles per day, more gross

ton-miles per locomotive or train hour or fewer pounds of coal per thousand gross ton-miles—the units of efficiency to which Mr. Basford gave so much attention?

It would be difficult to over-estimate the value of Mr. Post's services in helping to develop the Transportation Act of 1920—the most constructive piece of railroad legislation ever placed upon the federal statute books. As chairman of the Railroad Committee of the United States Chamber of Commerce and because the leaders in Congress knew and had confidence in him, he was in a position to render invaluable service in bringing the different interests together. After the passage of the Act he was also in a position to promote an educational campaign which tended still further to harmonize the different interests and bring about a state of public opinion which insisted that the Transportation Act be given a fair and thorough trial. This not only required rare tact and diplomacy, but also a tremendous amount of hard work



George A. Post

in developing a constructive program and keeping everlastingly at it.

It would be difficult in a short space to evaluate Mr. Post's work as head of the Railway Business Association. That body was organized at a time when conditions in the railway and railway supply field were desperate as a result of the panic of 1907. Apparently, the reason for Mr. Post's success as president of the Railway Business Association was his able mind, his diplomacy and consummate tact, and his rare qualifications as a public speaker. It is said that he was always willing, if not anxious, to learn from others. Most important of all, however, was his readiness to lay his cards on the table. This was peculiarly an asset because it was to have been supposed that the then unpopularity of the railroads would readily have been directed at any organization made up of concerns with which the carriers had as close affiliations as the association's members. Mr. Post, however, admitted the supply concerns' selfish interest and made no bones about it. When a man admits a selfish interest in this manner, the psychology of the situation is that he is less likely to be criticized for it.

In one of his addresses made at the time of the formation of the Railway Business Association, Mr. Post said:

"The railroads of America are just now the victims of a wrath trust. . . . In any dispute the right is seldom all on one side. All the zeal for gain and commercial advantage in this country is not confined to those who manage our railroads. Every shipper is not a saint, nor is every common carrier a demon. Not every complaint lodged against a railroad is founded in truth and equity. A large percentage of the hue and cry against railroads is simply the vaporings of chronic growlers, who growl at railroads as they growl at their neighbors, or find fault with their family's expenditures."

"It is true beyond a doubt that there have been in the past and are at the present many things in the conduct of our railroads that were not and are not right, and against which protest has been and may be rightly made. To deny this would be silly, and would render abortive at their inception any efforts that we might make in behalf of railroads. If we would be influential in our friendship for the railroads, our attitude must not be that of condonation of any wrong, but staunch advocacy of fair play all round. We are manufacturers of railroad materials, not vendors of taffy."

"There is serious work to be done. We want orders. We want to see the fires lighted in our furnaces, profits flowing in our coffers, working men made glad by the joyous sound of the shop whistles calling them from idleness to work. Not one of these hopes can be realized until railroads are relieved of the incubus of hostile agitation that now halts their successful operation."

On another occasion he said:

"The Railway Business Association has set out to make friends for the railroads. We have a direct and vital interest in bringing about a better understanding between the railroads and the public. If we succeed, it will be greatly to our advantage. We do not of

seek to cloak our personal interest in the welfare of the railroads. We are proud of it.

"The Railway Business Association is unique. It proposes to go to the American people and discuss railroad economics without any trace of rancor, and with no possible connection with office getting. One of the most serious troubles with the proper adjustment of railroad problems is that the people rarely hear railroad matters discussed except in the heat of a political contest, and by men who want to be elected to some office. The men who compose the Railway Business Association don't want to go to Congress, to the legislature, or be governor, nor hold any other office. They couldn't afford to do it. All they want is business. If they can get business, that will mean prosperity for their workingmen."

George Adams Post was born in Cuba, N. Y., on September 1, 1854. He was educated in the public schools and the academy and normal school at Oswego, N. Y. His father had been connected with the Erie, and at the age of 18 the son entered the service of that road in the freight department, becoming later assistant to the superintendent of motive power. As soon as he came of voting age, he entered politics and when but 22 was elected mayor of Susquehanna, Pa. Six years later he was elected to Congress, being the youngest member in the House of Representatives at the time. He was a delegate to the state conventions of his party in Pennsylvania for several years, was chairman of his county committee, secretary of the Democratic Congressional Committee for the presidential campaign of 1884 and the next year chairman of his state convention.

He had studied for the bar while in the freight office and was admitted to practice in Pennsylvania. He was editor and part owner of The Montrose (Pa.) Democrat from 1883 until 1889, when he moved to New York and became an editor of The World for two years. In 1892 he entered the railroad supply business as vice-president of the Standard Coupler Company, assuming its presidency in 1894. In 1903-4, he served as president of the Railway Supply Manufacturers Association, and was chairman of the committee on general arrangements for the American Railway Appliance Exhibition held in connection with the International Railway Congress in Washington in 1905. He was one of the organizers of the Railway Business Association in 1908, and served as its president from 1908 until 1918. Mr. Post retired from the presidency of the Standard Coupler Company in January, 1921, and established the George A. Post Company, dealing in railway materials and supplies, with headquarters in New York. In January, 1921, he was elected president of the Hudson River Bridge Corporation. Mr. Post was a national councillor of the United States Chamber of Commerce and at the time of his death was chairman of its railroad committee.



143,607 Miles Before It Was Shopped

Pennsylvania locomotive No. 1567, in service between Elmira, N. Y., Canandaigua and Williamsport made this record before it was shopped for classified repairs. During 1924 there were four failures entailing a total delay of 41 minutes; in 1925, two failures, total delay, 185 minutes. The locomotive was regularly assigned to four enginemen, but it was also occasionally handled by extra men.

Electrical Men Meet in Chicago

Sixteenth annual convention of the Association of Railway Electrical Engineers

THE sixteenth annual convention of the Association of Railway Electrical Engineers, held at the Hotel Sherman, Chicago, October 27 to 30, was the largest that the association has ever held. Not only was the attendance greater than at any preceding convention, but the amount and variety of electrical equipment on display in the exhibit hall exceeded any similar display in previous years. Fifty-nine members of the Railway Electrical Supply Manufacturers' Association more than filled the recently completed exhibit hall.

The opening session of the convention was called to order at 10 a. m., Tuesday, October 27, by the president, F. J. Hill, chief electrician of the Michigan Central. The report of the secretary-treasurer, J. A. Andreucetti, assistant electrical engineer of the Chicago & Northwestern, showed a balance of \$4,407.80 in the treasury.

The second session was opened with the presentation of a report on train lighting by A. E. Voight, car lighting engineer for the Santa Fe. It covered many of the principles to be observed in obtaining the best results with the potential and modified potential systems of lighting control which are at present extensively used. Automatic switches, adjustment of equipment, belts, pulleys and battery boxes were also considered. As most of the committee findings were in the nature of suggestions rather than recommendations it was voted to continue the committee with instructions to look further into the subjects treated and be prepared to give more specific recommendations at the next annual meeting.

A brief report was presented by the committee on wires and cables. For a number of years, the Association of Railway Electrical Engineers has had a committee working in conjunction with the American Engineering Standards Committee on the matter of specifications for wires and cables. The extent of the report was somewhat limited as it depended entirely upon the progress made by many other committees and sub-committees. There was no discussion.

J. E. Kilker, power plant engineer of the Missouri Pacific, presented a report on railroad stationary power plants. The report was brief and laid special emphasis throughout upon the low efficiencies and inadequate facilities of railroad power plants in general.

From the discussion which followed, it was evident that the majority of those present recognized the inefficiency of railroad stationary power plants. In a number of instances where steam has been used very largely for blowing up engines in the engine house the use of the steam plants has been discontinued and electrically driven blowers placed immediately over the stack. Although no cost figures were available, it was felt that the electrical method was the cheaper except in places where it was absolutely necessary to have steam available for other purposes. The same thing appeared to be true in connection with the supply of compressed air, the electrical compressors apparently being cheaper when the over-all efficiency of the boiler plants was taken into consideration. In some cases where hot water was required for boiler washing it was felt that both steam and electric service were not justified. In short the matter appeared to be a case for individual consideration to be decided after a careful survey of all conditions involved.

The report of the committee on Safe Installation and Maintenance of Electrical Equipment was presented by L. F. Miller, formerly road foreman electrician of the Chesapeake & Ohio, and now with the Industrial Controller Company. This report was somewhat longer than most of the others but in effect it was largely a duplicate of the report of the same committee last year. In substance it outlined certain procedures to be followed to prevent injury from contact with electrical circuits.

A large part of the discussion which followed dwelt upon the proper grounding of electrical circuits and conduits and considerable divergence of opinion was apparent. Some roads stated that they made periodical tests of ground connections but apparently such tests are liable to be neglected. The general subject of grounding was considered of so great importance that it was referred back to the committee with instructions to investigate the matter more thoroughly and be prepared to present at the next meeting more specific information on the methods of making and testing ground connections.

The report of the committee on Illumination was presented by L. S. Billau, assistant electrical engineer, Baltimore & Ohio. The committee has been at work for two years compiling a manual of lighting practice for railroads and the report this year includes the final sections of this manual. Among the illumination problems considered this year are those of drafting rooms, passenger and freight stations, storehouses, warehouses, piers, car lighting and yard lighting. The manual is very complete and gives specific information concerning the various types of lighting fixtures and units for the various conditions which must be met. It is the intention of the committee to proceed with the publication of the manual in the near future.

In keeping with the request of the U. S. Department of Commerce to eliminate waste in industry, the lamp manufacturers have spent much time and study in the development of a new line of lamps for car lighting. There are eight lamps at present in this line and it is the intention to have these eight lamps replace 48 lamps of various types and sizes which are at present being used in train lighting service. The new line of lamps will be available in sizes of 15-watt, 25-watt, 50-watt and 100-watt, although in the discussion which followed, it was plainly evident that there was a very large demand for lamps in the 75-watt size, so large a demand, in fact, that it is more than likely that the 75-watt lamp will be eventually added to the line. It is not the intention to replace immediately all present train lighting lamps with this new line, but to substitute gradually the new bulbs for the old as replacements are necessary. In the meantime, the old lamps will be available for some time to come. The new lamp is frosted with the frost inside the bulb, a feature which makes it easy to clean while at the same time eliminating any objectionable glare.

The report of the committee on Self Propelled Vehicles was brief and considered as a progress report. It mentioned the development which has taken place during the past year in the various types of gasoline-electric locomotives and cars, giving the general characteristics of the design of each type. The discussion upon this report was limited, but one question was referred back to the com-

mittee for further consideration and that was the subject of illumination in rail motor cars. It seemed to be the predominating opinion that the lighting of cars of this type was by no means comparable with that of other railway equipment.

A report on train control was presented by F. E. Starkweather, electrical and assistant signal engineer of the Pere Marquette. The committee felt that hasty action should not be taken with regard to recommendations, and in its brief report pointed out a few features that it favored. A single turbo-generator for both headlight and train control it considered preferable to two separate generators. Water tight conduit fittings with provision for draining condensation at low points were also looked upon with favor. The location of the electro-pneumatic valves in a convenient place on the boiler where short conduit and air piping connections are possible and where inspections are easily made were favored by the committee as was also the use of No. 14-24 R. S. A. terminal posts with half-inch hex nuts for engine wiring.

In view of the comparatively recent development of train control, the work of the committee was accepted as a progress report, it being the intention to make more specific recommendations when train control has been more generally developed.

L. C. Muelhein, chief electric headlight supervisor of the Baltimore & Ohio, presented the report on Locomotive Electric Lighting. The committee agreed with the committee on train control with regard to the use of a single generator for both headlight and train control operation and the report gave specifications regarding the size of generator which the committee considered suitable for use. The committee recommended a generator of not less than 750 watts capacity, capable of developing a normal voltage of 32 volts at full load at a steam pressure of 100 lb.

Photometry of headlight reflectors had also been investigated somewhat but no development of sufficient importance had been made to include in the report. It was recommended that this matter be carried over until next year when it was expected definite conclusions could be reached with respect to detail methods of photometry.

The discussion which followed the report centered upon the committees recommendations for a 750-watt generator. A large number were of the opinion that the 500-watt headlight generator, of which many thousands are in use, could be used satisfactorily for both locomotive lighting and train control operation. It was stated that the present machine rated at 500 watts could be made to carry a load of 625 watts, if necessary, and it was felt that they should be able to operate satisfactorily in the dual capacity. The degree of maintenance on a machine so overloaded, however, was believed to be considerably higher than in the normally operated generator. On the other hand some roads stated that it would be necessary for them to have a machine of more than 500 watts.

The report of the committee on Loose Leaf Manual was presented by L. S. Billau. Under the guidance of the committee many of the practices of the association are being included in a manual so that the recommendations which are buried in the bulk of the association proceedings will be much more readily available. In order that changes may be made in such a manual from time to time as necessity requires, the plan of the committee is to have a manual made in the loose leaf style so that changes may be made with the least trouble. The committee also felt that it was important that the material which went into the manual should be placed there only after due consideration and that a high standard should be maintained. The subjects which are planned to be included in the first draft of the manual are electric train lighting,

electric headlights and locomotive lighting and motor and control equipment. The first edition of the manual will be known as the 1925 edition.

Another manual which the association is publishing this year is the manual on electric welding. This is the result of much study in the welding field and includes only such practices as have been found to be entirely successful in every respect. The chairman of the committee which handles welding, E. Wanamaker, electric engineer of the Rock Island, stated that the manual would be ready for distribution within a short time.

Election of Officers

The officers elected for the ensuing year are, E. Wanamaker, electrical engineer, Rock Island, president; C. R. Sugg, electrical engineer, Atlantic Coast Line, first vice-president; E. Marshall, electrical engineer, Great Northern, second vice-president.

The Railway Electrical Supply Manufacturers' Association also elected the following officers: E. A. Lundy, E. A. Lundy Company, Pittsburgh, president; W. H. Fenley, Kerite Insulated Wire & Cable Company, Chicago, first vice-president; George R. Berger, Gould Coupler Company, Chicago, second vice-president.

Boxing and Crating Taught at Forest Products Laboratory

REPRESENTATIVES of 15 railway and express companies and inspection bureaus, attended the special instruction short course in boxing and crating at the Forest Products Laboratory, Madison, Wis., from October 12 to 16, which was arranged by the Freight



Large Drum Emphasizes Efficient Container Design

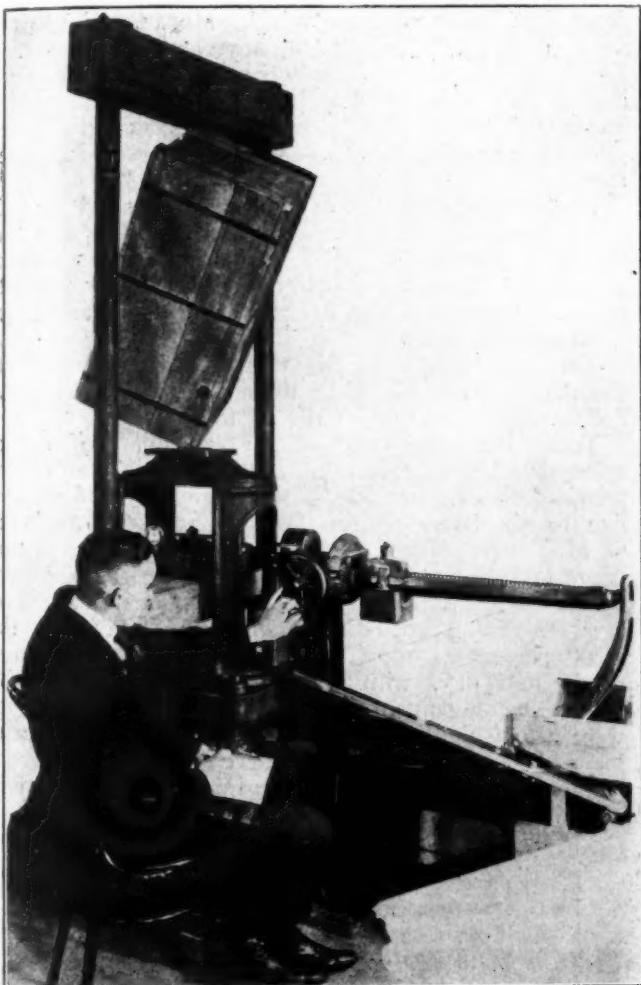
Claim division of the American Railway Association in connection with the work the division is doing to reduce losses due to poor packing and improperly designed boxes and crates. Companies which sent representatives to take the course included the Chicago, Burlington & Quincy;

the Norfolk & Western; the American Railway Express Company; the Erie; the New York Central; the Chicago, Milwaukee & St. Paul; the Merchants' Dispatch; the Trunk Line Freight Inspection Bureau; the Louisville & Nashville; The Chesapeake & Ohio; the Wabash; the Lehigh Valley; the St. Louis-San Francisco; the Western Weighing and Inspection Bureau; and the Illinois Central. The instruction in the course was presented in a series of lectures which were supplemented by demonstrations with the laboratory's testing machines and by informal discussions of points brought up by the freight and express men.

The important details of efficient container design from the transportation standpoint were emphasized by the use

greatly increase the strength of the container but make it possible to reduce the thickness of the lumber in the sides, top and bottom.

A test was made to show the importance of diagonal bracing to insure rigidity in crates by the use of a vibrating machine. A crate without any braces was placed on the machine and when its weakness had become evident the apparatus was stopped, two diagonal braces were placed on the crate and the machine was again started. The braces prevented nearly all of the skewing and made the crate more rigid than it was at the beginning of the test. Time was also devoted to the study of fibre boxes and particular attention was given to the reinforcement of containers of this type.



Compression Machine Tests Diagonal Strength of Boxes

of a hexagonal drum 14 ft. in diameter which, as it revolved, gave the packages treatment similar to that received in transit. A similar but smaller drum was used for testing small containers. Another piece of equipment known as a vibrating machine or shaker reproduced the weaving action and shocks that are imparted to shipping containers by the swaying and switching of the freight car. A compression machine was used for determining the resistance of different kinds of containers to crushing or distortion.

The instruction particularly stressed the importance of nailing and strapping in wooden box construction and of bracing in crate design. Tests were made to show that cemented nails have a greater holding power than uncoated ones and smooth nails are more effective than barbed. It was also shown that proper bindings not only

George Muirson Totten, C. E.

An Appreciation, by Gilbert Totten McMaster, M. D., His Nephew

[The Panama Railroad Company has recently installed in the station at Panama a memorial to George M. Totten, its first chief engineer; and this article has been written in connection with the unveiling of the memorial. This railroad company, though now owned by the United States Government, is the original corporation which was chartered by the State of New York in April, 1849. E. A. Drake, vice president at New York City, has filled that office continuously for 37 years. The bronze relief map which appears in the engraving, represents surveys as of the year 1852. The inscription at the bottom sets forth that Colonel Totten, chief engineer from 1850 to 1875, was born in 1809 and died in 1884.—EDITOR.]

THE man who penetrated the swamps, designed the roadbed and surveyed the line of the Panama Railroad from Navy Bay, on the Atlantic, to the Bay of Panama, on the Pacific, whose brain thought out and put the Panama Railroad into working condition, was George M. Totten, of New Haven, Connecticut, chief engineer of the Panama Railroad Company.*

The railroad was begun in the year 1850, and the last rail was laid on January 27, 1855. In 1849 the Panama Railroad Company entered into contract with Messrs. George Muirson Totten and John C. Trautwine for the construction of the road. Totten and Trautwine knew more about the climate, terrain, flora and fauna of this region than any other man of their day. Some years before, they had been in the employ of the Colombian government, building a canal (Canal del Dique) from the Magdalena river to the Caribbean sea at Cartagena. Hence the conditions they were to encounter were well known to them. Their operations were outlined by a reconnaissance, previous to their employment, by Colonel G. W. Hughes, U. S. A., corps of engineers.

At this period the Isthmus swarmed with emigrants on their way to California seeking gold; and for various reasons the original contract could not be carried out. Mr. Totten was then engaged as engineer of the road and not as contractor. James L. Baldwin was chief assistant engineer. He and Mr. Trautwine proceeded to Manzanilla Island and began clearing in May, 1850.

By June the rainy season was on, with its multiplied discomforts. Mr. Totten and Mr. Stephens, president of the company, had secured a few workmen, but the well-known terrors of the climate produced the inevitable difficulties. In July, Dr. John Augustus Totten, of New Haven, Conn., brother of the chief engineer, arrived; and he was the first surgeon of the Panama Railroad. By August, construction was begun in earnest and a station was established on the Chagres river. Dr. Totten established hospitals. Before the end of the rainy season,

* General Information, Series No. IV; information from abroad, Navy Department, Bureau of Navigation, Office of Naval Intelligence, Washington.

tropical fevers cut into the ranks of the 450 laborers and "there was a dead Irishman to every sleeper."

Obstructions and privations, however, made Totten and Baldwin work with greater determination, and workmen were induced to come from neighboring islands. On April 16, 1851, the railroad was finished as far as Gatun and the line had been surveyed as far as Barbacoas, 16 miles further. In November, 1851, 1,298 passengers,



George M. Totten, C. E.

Bronze Tablet Recently Set Up in the Station of the Panama Rail-Road at Panama

arriving from New York by Pacific Mail steamers, were carried as far as Gatun on platform cars; and the news of this primitive passenger traffic, when carried by Totten to New York, revived the slumping finances of the company. In March, 1852, the railroad had got about eight miles beyond Gatun, and passenger trains were put on to connect with the steamers.

At Barbacoas the Chagres river, 300 ft. wide, and subject to forty-foot floods in a single night, had to be crossed. One span of the bridge was carried away when the bridge had been nearly finished.

John L. Stevens died at this time, relieving the chief engineer of one "who did little but assume the other fellow's credit" (G. M. Totten letter). W. C. Young became president of the company. Contractors found it almost impossible to carry on, due to climatic effects on the Irishmen. Again the work slowed down and the bridge remained unfinished. But Totten induced the company to take renewed hold of the project in earnest, and he requested Mr. Young to resign. David Hoadley then became president of the company. The chief engineer and his brother, the doctor, contracted for laborers from every quarter of the world. More than 7,000 men were obtained. The climate, however, jeered at them. Chinamen became melancholy, committing suicide. Irish and French were laid low by yellow fever and malaria. Americans and British withstood the conditions best of all. Discouraging calamities met the Tottens at every step.

By January, 1854, Culebra ridge was reached, 37 miles from Aspinwall, and but 11 miles from Panama. At midnight, January 27, 1855, in black darkness and torrential rain, Engineer Totten and his brother entered the cab of a locomotive, the last rail being down, and passed from ocean to ocean.

The total length of the railroad was 47 miles and the ruling grade 60 ft. to the mile. The summit was 259 ft. above the level of the Atlantic ocean.

Today the canal covers the greater part of the old railroad bed, good evidence that the G. M. Totten surveys provided the shortest line. Daily trains in 1855 required five to six hours to run from Panama to Aspinwall. G. M. Totten reduced the time of transit in 1862 to three hours and even less. He supplied the best rolling stock of the day. His locomotives, fourteen in number, averaged 20 tons, a good-sized engine in 1850. More than 1,500 passengers were frequently transported during a single half day, with large quantities of mail. Mr. Totten's arrangements for loading and unloading freight were astonishingly perfect. Double tracks ran from the main road to the various wharves, making a way for freight cars to the ship's side, an innovation at that period of American railroading.



Painted by Cayley Robinson, A. R. A.

"British Industry—Cotton"—a Poster—Original in Color—Issued by the London, Midland & Scottish

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Causes of Railroad Abandonments

Bureau of Public Roads finds exhaustion of natural resources primary cause

WASHINGTON, D. C.

IN order to determine the significance and economic importance of the abandonments of railway mileage, and especially to ascertain the influence of motor vehicle operation, the Bureau of Public Roads of the United States Department of Agriculture has made a study of the circumstances surrounding the abandonments since 1920, from information set forth in the published opinions of the Interstate Commerce Commission in abandonment cases instituted under the provisions of the transportation act, and the report, by Henry R. Trumbower, economist of the Bureau of Public Roads, is printed in the October issue of "Public Roads," published by the Bureau. The results lead to the conclusion, he says, that in but few instances has highway competition been the primary cause of the abandonment and that the exhaustion of the natural resources which furnished the bulk of the traffic for these abandoned lines and branches accounted for 65 per cent of the number of abandonments and for 57.8 per cent of the abandoned mileage. Competition of other roads resulted in traffic losses which brought about the abandonment of almost 30 per cent of the total abandoned mileage, the study shows, and less than 5 per cent of the abandoned mileage can be attributed to motor vehicle competition as the primary cause.

2,438 Miles in Five Years

Mr. Trumbower says that at the end of 1923 the railroad mileage in the United States was 3,815 miles less than in the peak year 1916, although there was some mileage added as well as abandoned, but that it would be difficult, if not impossible, to determine the causes of the abandonments made before 1920, when the matter was placed under the jurisdiction of the Interstate Commerce Commission. From 1920 to May 1, 1925, according to Mr. Trumbower's study, the commission granted certificates of public convenience and necessity authorizing the abandonment of 41 whole lines of railroad totaling 1,609.63 miles, and 79 branches totaling 829.32 miles, or a total of 2,438.95 miles. Of the 120 abandonments 66 per cent were branches and 34 per cent were lines, while the branches constituted only 34 per cent of the abandoned mileage and the lines constituted 66 per cent. The average length of an abandoned line was 39.25 miles and of an abandoned branch only 10.49 miles. In the same period the commission also issued certificates authorizing the new construction of 2,673.36 miles of railroad. An abstract of Mr. Trumbower's report follows:

East North Central States

Show Largest Abandonment

"The abandoned mileage is not confined to any particular section of the country; in every state except eight there were some abandonments. The states in which no mileage was relinquished were Delaware, Idaho, Kansas, Kentucky, Maryland, Missouri, Nebraska, and Utah.

"The smallest mileage abandoned was in the New England states, where only 54.47 miles were relinquished in 11 branches, of 4.95 miles average length. In the East North Central states there were 26 abandonments, involving 810.26 miles, or an average length of 31.16 miles; this is the largest mileage found in any of the sections, and is due in a large measure to the abandonment

of eight whole lines in this section. The abandonment of the Indiana coal division of the Chicago & Eastern Illinois, comprising 162.1 miles, and the Chicago, Peoria & St. Louis in Illinois with its 234.3 miles of line, constituted a large portion of the abandoned mileage in this section.

"In analyzing this situation the abandoned mileage in the various sections should be compared with the total railroad mileage. In this period, extending over almost five years, the 2,438 miles of abandoned railroads appear large when considered alone. If the trackage abandoned were brought together and placed end to end it would reach from New York City to Sacramento, Calif. In other words, it is equivalent to a transcontinental line of railroad, or, compared in another way, it is almost equivalent to the Wabash system with its 2,476 miles of line. But when comparison is made with the total railroad mileage of the country these abandonments do not take on such a large aspect. On December 31, 1919, which was just prior to the passage of the law making it necessary for the railroads to file applications for the right to abandon lines with the Interstate Commerce Commission, the railroad mileage of the country was reported as 253,152 miles. For the country as a whole, therefore, the mileage abandoned since 1920 is less than 10 miles for every 1,000 miles in existence at the end of 1919.

"The abandonments in the Middle Atlantic states were relatively the smallest, being only 4.1 miles per thousand, although the relative abandonments were approximately the same for the West North Central states. The greatest abandonment relative to the 1919 mileage took place in the East North Central states, where the abandoned mileage amounted to 18 miles for every thousand miles in existence in 1919.

Causes of Sectional Differences in Mileage Abandoned

"The relative abandonments differ rather widely in the several groups of states because of the variations in the local conditions under which the railroad lines were built. In general it can be said that the relative abandonments in the states east of the Mississippi river were greater than in the states west of the Mississippi. For every thousand miles of railroad in the Eastern states 11.6 miles were abandoned and for every thousand miles west of the Mississippi only 7.6 miles were abandoned. The railroad mileages in these two broad sections of the country at the end of 1919 were almost the same; in the Eastern states there were 125,434.98 miles and in the Western states 127,717.19 miles. But the abandonments in the Eastern states were 1,459.47 miles, 49 per cent greater than the abandonment of 979.48 miles in the Western states. This difference can be largely explained by the fact that the railroads are older in the Eastern states, and a great many of the abandonments consisted of lines or branches of railroads built originally for the purpose of shipping to market various natural resources, the supply of which later became exhausted and no other traffic had been developed to warrant the continued operation. That type of railroad extension and development was not prevalent to the same extent in the Western states.

"While the average length of the abandoned lines and branches has already been touched upon, it is of interest

to determine how many were relatively short, and how many were more or less extensive. Fifty-seven of the abandoned roads, constituting 47.5 per cent of the total number abandoned, were less than 10 miles long; those between 10 and 29 miles in length, 44 in number, were 36.6 per cent of the total. The remainder, or 19, ranging in length from 30 to 234 miles, constituted only 15.9 per cent of the abandonments. The lines abandoned are naturally of much greater average length than the branches.

Logging and Mining Roads a Majority of Those Abandoned

"While the purposes for which these abandoned roads were built are not indicated in every case, it is clear that a majority were originally constructed as logging or mining roads. In some cases railroads already in operation built extensions or branch lines into certain sections or territories for the main purpose of tapping timber or

PRIMARY CAUSES OF LACK OF TRAFFIC				
Cause	Number or railroads	Percent- age of number. Per cent	Length. Miles	Percent- age of length. Per cent
Exhaustion of natural resources...	78	65.0	1,411.20	57.8
Competition of other railroads....	14	11.7	713.34	29.3
Competition of motor vehicles....	10	8.4	104.46	4.3
Rearrangement of lines or railroad.	5	4.1	32.64	1.3
Miscellaneous	13	10.8	177.31	7.3
Total.....	120	100.0	2,438.95	100.0

mineral resources and in that manner sought to secure traffic consisting of the raw materials or products of such resources in their finished or semi-finished state. In a great many cases new lines of railroad were built for this purpose and connected with lines or branches already in existence. The natural resources exhausted and traffic of other sorts having failed to develop, these lines and branches have been left without sufficient business to warrant continuance. That is the simple explanation of the majority of the abandonments.

"The logging and mining roads, both lines and branches, aggregated 1,351.30 miles, or 55.4 per cent of the total abandoned mileage; and of these 1,351.30 miles 62.8 per cent were logging roads. Although the abandoned mileage of logging roads was greater than that of the abandoned mining roads, the mining roads were of greater average length. The lines built as logging roads and abandoned in this period averaged 25 miles in length; the lines built as mining roads averaged 53.3 miles. The same relative difference is noted in the average length of branch roads. The logging roads averaged 9.2 miles in

length and the mining roads 16 miles. Of the 28 lines of logging and mining roads which were abandoned 24 were logging roads and only 4 mining roads. The tendency to build separate and individual lines of railroad to tap mineral resources was not as marked as the tendency to build such lines in order to market timber products.

"In most instances the lines of logging and mining railroads were projected and constructed by companies or interests engaged in the lumber or mining business and the railroad companies were in fact subsidiaries of such industrial companies. The branch lines abandoned were constructed in most cases by railroad companies which sought in this manner to obtain additional traffic and to meet the industrial and transportation needs of shippers.

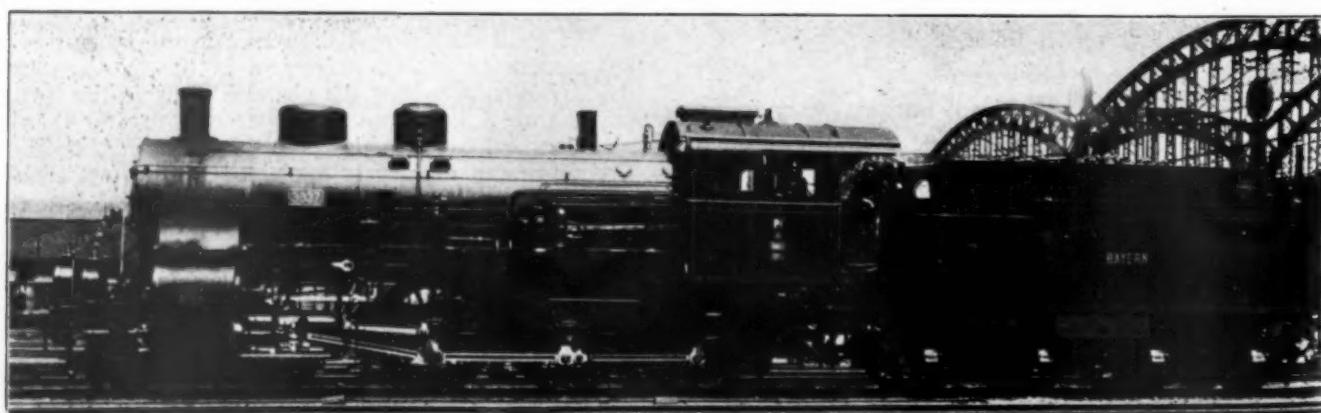
Motor Vehicle Competition a

Minor Cause of Abandonment

"The causes leading to the abandonment of this railroad mileage are in some instances simple and easily determined; in other instances the causes are more or less complicated. The lack of sufficient traffic to continue making the operation profitable or even possible is the fundamental reason for abandonment. The causes for the lack of traffic are varied. The primary causes cited are: (1) Exhaustion of natural resources; (2) competition of other railroads; (3) competition of motor vehicles operating on highways; (4) rearrangement of lines of railroad; and (5) miscellaneous causes. The reasons for the abandonments, grouped according to this classification, are summarized.

"Although, as has been shown, the Interstate Commerce Commission has authorized the abandonment of a large railroad mileage in the last five years, it should be borne in mind also that during this same period certificates of public convenience and necessity were issued by the commission authorizing the new construction of 2,673.36 miles of railroad. This involved the construction of 17 lines aggregating 1,159.52 miles and 67 branches aggregating 1,513.84 miles. How many miles were actually constructed can not be determined from the official reports, but it is reasonable to assume that a substantial portion of this mileage was built and put into operation.

"It is generally believed that highway transportation will be considered an important element in the future railroad development of the country. Highway transportation may make it necessary to make railroad extensions into certain territories and it will also make it possible to relinquish the operation of certain low-traffic lines and branches, thus saving money for the railroads and providing the public with reasonably adequate transportation service."



A Ten-Wheeler Passenger Locomotive at Munich

Annual Accident Bulletin for 1924

THE Interstate Commerce Commission has issued Accident Bulletin No. 93, consisting of 115 large pages, containing the record of collisions, derailments and other accidents occurring on the railroads of the United States during the 12 months ending with December 31, 1924.* The total number of casualties in the tables for 1924 is 150,356; made up of 6,617 persons killed and 143,739 injured. The principal totals are shown in our Table A. In the bulletin the various classes of accidents and casualties are analyzed in great detail, as in preceding years, with minute classification of causes of accidents.

In general the totals are smaller than in 1923, but comparison with 1922 shows lesser differences. The total number of passengers killed in train accidents, 49, is the smallest on record. The number of passengers killed in train accidents, excluding persons carried under contract

inent roads are, no doubt, to be accorded a good share of credit.

Fatalities at highway crossings were 119 less in 1924
242,807, or 978 less than one year before, though the
report gives the total number eliminated as only 763.

The abandonment of several hundred miles of railroad during the year must have been a main cause of the

TABLE C—PERSONS KILLED AND INJURED AT HIGHWAY GRADE CROSSINGS

Year	Non trespassers		Trespassers		Total	
	Killed	Injured	Killed	Injured	Killed	Injured
1924.....	2,042	6,357	107	168	2,149	6,525
1923.....	2,135	6,166	133	148	2,268	6,314
1922.....	1,714	5,220	96	163	1,810	5,383
1921.....	1,599	4,702	106	166	1,705	4,868
1920.....	1,691	4,804	100	273	1,791	5,077

diminution of this total, but whether crossings on abandoned lines are all included under the head of "eliminated" is not stated.

A chart in the bulletin shows that of the total casualties

TABLE A—CASUALTIES TO PERSONS IN RAILROAD ACCIDENTS—FOUR YEARS

	1924		1923		1922		1921	
	Killed	Injured	Killed	Injured	Killed	Injured	Killed	Injured
Passengers								
In train accidents.....	49	2,292	54	2,949	106	3,101	110	2,601
In train service accidents.....	120	3,619	105	3,572	119	3,703	116	3,543
Total.....	169	5,911	159	6,521	225	6,804	226	6,144
Employees on duty								
In train accidents.....	216	1,477	275	1,939	253	1,711	195	1,296
In train service accidents.....	976	30,697	1,288	37,537	988	30,480	901	27,228
Total.....	1,192	32,174	1,563	39,476	1,241	32,191	1,096	28,524
Total (a) passengers and (b) employees on duty.....	1,361	38,085	1,722	45,997	1,466	38,995	1,322	34,668
Employees not on duty.....	54	227	82	258	57	243	41	223
Other persons, not trespassing								
In train accidents.....	60	145	29	165	7	26	3	16
In train service accidents*	2,184	7,061	2,310	6,997	1,891	5,881	1,740	5,346
Total.....	2,244	7,206	2,339	7,162	1,898	5,907	1,743	5,362
Trespassers†								
In train accidents.....	39	58	52	85	47	58	49	141
In train service accidents.....	2,517	2,795	2,727	2,962	2,383	2,786	2,432	2,930
Total.....	2,556	2,853	2,779	3,047	2,430	2,844	2,481	3,071
Total all classes of persons in train service accidents.	6,215	48,371	6,922	56,464	5,851	47,989	5,587	43,324
Non-train accidents.....	402	95,368	463	115,248	474	86,882	409	77,361
Grand total.....	6,617	143,739	7,385	171,712	6,325	134,871	5,996	120,685

^aThis item includes the bulk of the casualties at highway grade crossings. In some cases, however, the victims are classified as trespassers; and some of the crossing accidents are included in train accidents.

†A small percentage of the persons classed as trespassers represents employees.

TABLE B—TOTAL NUMBER OF TRAIN ACCIDENTS—FOUR YEARS

	1924				1923				1922				1921			
	No.	Damage	Killed	Injured	No.	Damage	Killed	Inj'd	No.	Damage	Killed	Injured	No.	Damage	Killed	Injured
Collisions.....	5,166	\$5,077,659	109	1,815	7,115	\$6,904,900	134	2,396	5,611	\$6,176,780	195	2,536	5,102	\$4,657,390	130	1,839
Derailments....	14,259	16,538,877	181	1,948	16,708	18,396,050	215	2,479	13,155	14,969,250	187	2,226	13,615	16,518,440	132	1,854
Other train accidents	2,943	1,709,444	77	223	3,674	2,323,930	63	283	2,826	1,722,510	34	160	2,534	1,577,520	47	231
Total.....	22,368	\$23,325,980	367	3,986	27,497	\$27,624,880	412	5,158	21,592	\$22,868,540	416	4,922	21,251	\$22,753,350	309	3,924

(the figure given to the newspapers by the commission) was only 41, which is one less than the unprecedented low total for 1923.

In Table B we give the totals recorded in the bulletin relating to collisions, derailments and other train accidents. Here as in other tables the casualty record is affected by the smaller number of persons in service. The total number of employees in service as reported by Class I roads for 1924 was 1,777,391 or 5.4 per cent less than in 1923. The most pronounced improvement in the whole record—1924 compared with 1923—is in total employees (on duty) killed and injured as shown in Table A (killed, 1,192 as compared with 1,563, a decrease of 23.7 per cent in 1923 as appears from Table C. The total number of these crossings (at grade), on December 31, was

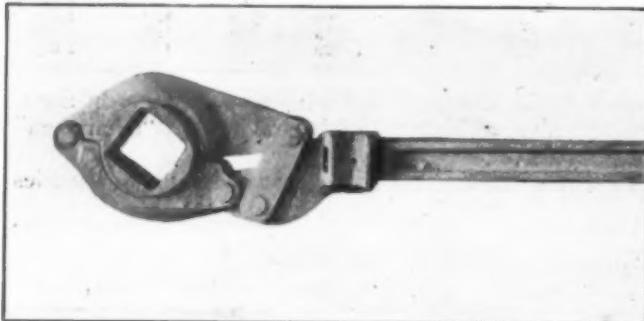
at crossings in 1924 (8,674) the percentage in which automobiles were involved was 84, as compared with 81 per cent two years before, and 61 per cent seven years before.

TERMS HAVE BEEN agreed upon by a citizens' committee in St. Louis, Mo., and representatives of the principal trunk line railroads entering St. Louis which, if ratified by the city administration, and by the citizens at a special election, will make the highway deck of the Eads bridge a free traffic route, while the railroads will use the railroad deck of the Municipal bridge, building the necessary railroad approaches on the east side of the Mississippi river. The railroads would continue to own the Eads bridge but would discontinue their use of it. The plan also provides for a new union station in East St. Louis, Ill., extension of the facilities of the union station in St. Louis, Mo., and extensive rearrangement of the freight yards on the east side of the river. The ultimate cost of the entire terminal plan would be approximately \$100,000,000.

*The last three annual statistical bulletins were noticed in the *Railway Age* as follows: November 8, 1924; September 29, 1923, and October 7, 1922.

Drop-Bottom Car Door Safety Friction Wrench

THE doors of hopper and drop-bottom cars are usually difficult to operate owing to the fact that they are subjected to considerable abuse in service. Consequently, much effort and time is required when dumping or winding up these doors. The Barret Machine Company, Pittsburgh, Pa., has developed a wrench especially designed for this work, which it is claimed will



No Bolts Are Used in the Barrett Safety Friction Car Door Wrench

function under all conditions with a minimum amount of effort and time.

The action of the wrench is secured through an arrangement of a toggle which gives a powerful tightening force in one direction only. The socket, which fits over the end of the car door shaft, is held between two straps

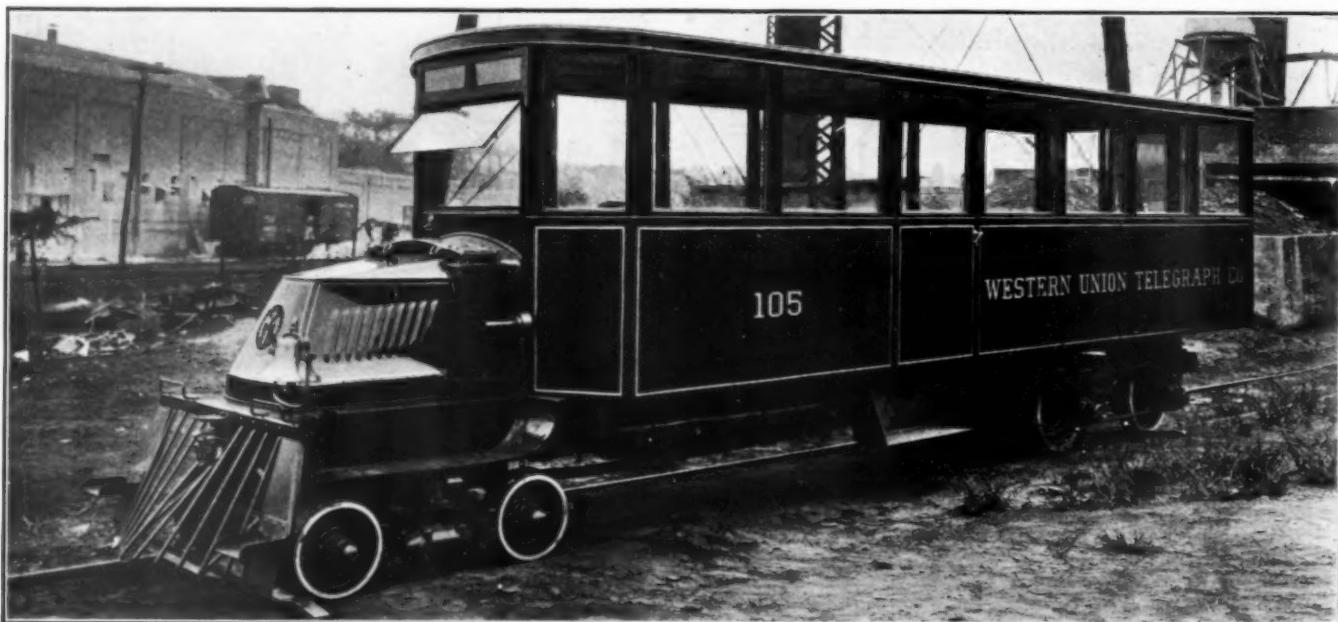
Motor Rail Car for Making Inspection Trips

AMOTOR-RAIL car built for the use of the vice-president of the Western Union Telegraph Company, as an inspection car for traveling over various railroads in the United States and Canada, has recently been completed by Fitz Gibbons & Crisp, Inc., Trenton, N. J. These inspection trips are made primarily for the examination of telegraph lines which sometimes parallel the railroads from 2,000 miles to 3,500 miles. The inspection party usually consists of from 12 to 15 men.

On account of the nature of the work for which the car was intended, the windows were built 36 in. high so that the inspectors can see the wires at the tops of the poles. The extra window height made it necessary to design special window regulators as there were no standard regulators available which could be used satisfactorily to raise and lower a window of this size.

The car is equipped with genuine brown Spanish leather seats and has a seating capacity of 20 passengers. Two large lockers are provided for the storage of baggage. The interior is finished with walnut paneling and the ceiling is finished in white. On the left side of the car there is an enclosed step covered with a spring trap door of the usual railroad passenger car design. Two folding tables are hinged to the side of the body for the accommodation of blue prints, maps, etc. The framing of the car body is of ash and oak and the exterior paneling is of sheet steel. The body is finished in Brewster green with gold-leaf lettering.

The body was built on a Mack rail car chassis. The



Motor Rail Car Built for the Western Union Telegraph Company for Use as an Inspection Car

which form the head of the wrench. These straps grip the socket when pressure is applied to the wrench handle. The toggle action insures instantaneous release so that the possible chance of the wrench injuring the operator by catching is reduced to a minimum. By the use of the toggle, there are no complicated parts to get out of order and no ball bearings, ratchet heads, pawls or triggers to catch.

No bolts are used in the wrench.

trucks are equipped with Hyatt journal roller bearings and an Ingersoll-Rand air compressor furnishes air for the Westinghouse straight air brake and air sander. The car can be operated at a speed of 55 miles an hour.

T. C. POWELL, president of the Chicago & Eastern Illinois, will address the Western Railway Club at its next meeting, to be held on November 16.

General News Department

The St. Louis-San Francisco has extended its group life insurance plan, under its contract with the Metropolitan Life Insurance Company, New York City, to include all clerks and office and station employees, so that the total number of employees now participating is 2,700. The newly eligible employees are divided into two classes according to salary, one class being entitled to \$1,000 insurance and the other to \$2,000.

Prohibition enforcement agents investigating illegal transportation, at Chicago, questioned 12 New York Central trainmen and yardmen on October 26, at the request of the road's attorney. According to newspaper reports, several employees admitted knowledge of illegal shipments of liquor. Five roads, not named, are mentioned by the government officers as being under investigation, but Edwin Olson, attorney for the government, is quoted as saying that "no high railroad officials are involved." On Wednesday, October 28, a clerk of the New York Central was arrested, he having confessed, it is said, to complicity in "beer running operations."

The Railway Club of Pittsburgh held its annual smoker at the Fort Pitt Hotel, Pittsburgh, Pa., on October 22. A short business meeting preceded the feature of the evening which consisted of several vaudeville acts. The election of new officers for the ensuing year was announced as follows: President, F. G. Minnich, assistant general manager, Pittsburgh & Lake Erie; first vice-president, G. W. Wildin, general manager, Westinghouse Air Brake Company; second vice-president, J. L. Cunningham, superintendent motive power, Pennsylvania; treasurer, F. H. Stark, Pittsburgh, Pa.; secretary, J. D. Conway, secretary-treasurer, Railway Supply Manufacturers Association.

"Thirty-one Million Railroad Crossings Without an Accident," is the title of an advertisement which the Standard Oil Company of Indiana, Chicago, is publishing in newspapers in the West. During 1924 the vehicles operated by the Standard Oil Company crossed railroad tracks 31,000,000 times without an accident. This is an average of 85,000 crossings a day. This record is attributed to the effort on the part of the management to impress all employees with the need and desirability of careful driving. The company pointed out the dangers of careless driving and furnished placards reading: "This car stops at all railroad crossings." Each driver was asked to pledge himself to co-operate and to evidence his good intentions by displaying the placard on the rear of his machine.

The Central of Georgia has established the position of general agent at Savannah, appointing to that place the superintendent of the Savannah division. This meant the promotion of the superintendent of the Macon freight terminals to superintendent of the Savannah division, which in turn resulted in the following changes and advancements: trainmaster Southwestern division to superintendent Macon freight terminals; trainmaster at Albany to trainmaster at Macon; chief dispatcher to trainmaster at Albany; night chief dispatcher to chief dispatcher; dispatcher to night chief dispatcher; operator to dispatcher; extra operator to regular operator and a new extra operator was employed; ten different men benefitted in title or rank or increased compensation, or all three. The Official Guide for October shows the names of 97 officers of the Central of Georgia, from the rank of traveling passenger agent to chairman of the board. Comparison with a similar list published eight years ago shows that of these 97 only 25 occupy the same positions that they did in 1917.

Women Fight Motor Bus Competition

The Railway Employees' Journal is offering prizes to railroad women for the best essay on what a railroad woman can do to help the railways in their competition with the motor bus and truck.

This contest is a part of a campaign which is being conducted by the Benefit Association of Railway Employees. Three gold bracelet watches are being offered for the three best letters received. The contest is open to any woman whose father, husband, brother or son is an employee of a railroad of the United States. The essay must not exceed 1,000 words in length and must be sent to the editor of the Railway Employees' Journal, Chicago, before December 15.

Trainmen to Ask Increase in Pay

The general chairmen, on the Western railways, of the Brotherhood of Railroad Trainmen and the Order of Railway Conductors, at a conference in Chicago on November 3 and 4, voted to make a general request for increases in wages of approximately seven per cent, with the purpose of accomplishing a return to the peak rates which were in effect prior to the decrease ordered by the United States Railroad Labor Board on July 1, 1921. The trainmen, applying for a 12 per cent increase last year were generally successful in securing an increase of about five per cent. The new demands are intended to follow up that increase and secure the goal which could not be attained last year. A conference of the chairmen on the Southern roads will be held at Washington, D. C., on November 10, and on November 17 the chairmen of the trainmen and conductors on the Eastern roads will convene at Cleveland, Ohio. These conferences are expected to take the same action as that approved in the Chicago meeting. The brotherhoods on the Western lines expect to carry their demands to the managements without delay. The other brotherhoods are expected to adopt plans in the near future for securing similar increases. A meeting of general chairmen of the Brotherhood of Locomotive Firemen and Enginemen is scheduled for this purpose to be held in Chicago on November 19.

The C. P. R. in September

Gross earnings of the Canadian Pacific Railway for the month of September this year were \$18,909,071, the largest of any month since October, 1924, and represented an increase of \$3,415,088 over the gross of September, 1924. As against this large increase in gross earnings the increase in working expenses was only \$1,695,114, this item being \$12,641,452. Net earnings for the month were \$6,267,619, an increase of \$1,719,973 over the same month last year. Gross earnings for the nine months were \$124,674,088, a decrease of \$4,684,610 from the same period last year, but the net of \$21,635,921 was an increase of \$1,190,039 over the 1924 figures. Following are the figures showing the gross earnings, working expenses and net earnings, with comparisons for the month of September and for the nine months:

September—	1925	1924	Inc.
Gross	\$18,909,071	\$15,493,983	\$3,415,088
Work. exp.....	12,641,452	10,946,338	1,695,114
Net	\$6,267,619	\$4,547,645	\$1,719,973
9 months—	1925	1924	Inc.
Gross	\$124,674,088	\$129,358,698	*\$4,684,610
Net	21,635,921	20,445,882	1,190,039

*Decrease.

T. C. Powell Addresses Shippers

T. C. Powell, president of the Chicago & Eastern Illinois, objected to any claim that the rates on freight may be adjusted to commercial conditions on the mere assumption of so-called scientific conclusions, at the annual meeting and luncheon of the Chicago Shippers' Conference Association at the Hotel LaSalle, Chicago, on November 3. He commented on some of the changes proposed in the method of constructing freight rates, including such methods as a mathematical basis or an adjustment which is figured on the basis of the rate per ton mile, net ton miles per mile of road, and average train haul; and a compromise basis or

method in which a determination is first reached after which a rate scale is constructed which will be applicable over a large territory and the different scales applicable within such territory are added together to find an average.

The association elected the following officers: President, Roy W. Campbell, general traffic manager of the Butler Paper Corporation; treasurer, Howard B. Freck, general traffic manager of the Acme Steel Corporation, and secretary, W. J. Lahl, traffic manager of the American Seating Company.

Automatic Light-Signals at Highway Crossings

Flashing light signals for highway crossings have been authorized by the New York State Public Service Commission since June 4, acting on applications of various railroads, at 61 places. This activity of the railroads follows the commission's order of June 4, establishing signal standards. These new signals are to be installed at crossings scattered throughout the State, on nine different roads; the Buffalo, Rochester & Pittsburgh; the Delaware, Lackawanna & Western; the Erie; the Lehigh Valley; the Long Island; the New York Central; the New York, Chicago & St. Louis; the New York, Ontario & Western, and the Pennsylvania.

Meetings and Conventions

The following list gives names of secretaries, dates of next or regular meetings and places of meetings.

- AIR BRAKE ASSOCIATION.**—F. M. Nellis, 165 Broadway, New York City. Next convention, May 4-7, 1926, New Orleans, La. Exhibit by Air Brake Appliance Association.
- AIR BRAKE APPLIANCE ASSOCIATION.**—John B. Wright, Westinghouse Air Brake Co., Pittsburgh, Pa. Meeting with Air Brake Association.
- AMERICAN ASSOCIATION OF ENGINEERS.**—H. Almert, 63 E. Adams St., Chicago. Next convention, June, 1926, Philadelphia, Pa.
- AMERICAN ASSOCIATION OF FREIGHT TRAFFIC OFFICERS.**—Grant Williams, 1341 Railway Exchange, Chicago.
- AMERICAN ASSOCIATION OF GENERAL BAGGAGE AGENTS.**—E. L. Duncan, 332 So. Michigan Ave., Chicago. Next meeting, June 1, 1926, Atlantic City, N. J.
- AMERICAN ASSOCIATION OF PASSENGER TRAFFIC OFFICERS.**—W. C. Hope, C. R. R. of N. J., 143 Liberty St., New York.
- AMERICAN ASSOCIATION OF RAILROAD SUPERINTENDENTS.**—J. Rothschild, Room 400, Union Station, St. Louis, Mo. Next convention, June 15-18, 1926, Montreal, Quebec, Canada.
- AMERICAN ASSOCIATION OF SUPERINTENDENTS OF DINING CARS.**—T. W. Welsh, Chicago, North Shore & Milwaukee, Highwood, Ill. Next convention, 1926, Baltimore, Md.
- AMERICAN ELECTRIC RAILWAY ASSOCIATION.**—J. W. Welsh, 292 Madison Ave., New York. Annual convention, October, 1926.
- AMERICAN RAILROAD MASTER TINNERS', COPPERSMITHS' AND PIPE FITTERS' ASSOCIATION.**—C. Borchardt, 202 North Hamilton Ave., Chicago, Ill.
- AMERICAN RAILWAY ASSOCIATION.**—H. J. Forster, 30 Vesey St., New York, N. Y.
Division I.—Operating—J. C. Caviston, 30 Vesey St., New York. Freight Station Section (including former activities of American Association of Freight Agents).—R. O. Wells, Freight Agent, Illinois Central Railroad, Chicago, Ill. Medical and Surgical Section.—J. C. Caviston, 30 Vesey St., New York. Next meeting, April 20, 1926, Dallas, Tex. Protective Section (including former activities of the American Railway Chief Special Agents and Chiefs of Police Association).—J. C. Caviston, 30 Vesey St., New York, N. Y. Safety Section.—J. C. Caviston, 30 Vesey St., New York. Next meeting, April 13-15, 1926, St. Louis, Mo. Telegraph and Telephone Section (including former activities of the Association of Railroad Telegraph Superintendents).—W. A. Fairbanks, 30 Vesey St., New York. Division II.—Transportation (including former activities of the Association of Transportation and Car Accounting Officers).—G. W. Cover, 431 South Dearborn St., Chicago, Ill. Next meeting, April, 1926.
- Division III.—Traffic, J. Gottschalk, 143 Liberty St., New York. Division IV.—Engineering, E. H. Fritch, 431 South Dearborn St., Chicago, Ill. Annual convention, March 9-11, Chicago. Exhibit by National Railway Appliances Association, March 8-11. Construction and Maintenance Section.—E. H. Fritch. Electric Section.—E. H. Fritch. Signal Section (including former activities of the Railway Signal Association).—H. S. Balliet, 30 Vesey St., New York, N. Y. Next meeting, March 8-9, 1926, Chicago, Ill.
- Division V.—Mechanical (including former activities of the Master Car Builders' Association and the American Railway Master Mechanics' Association).—V. R. Hawthorne, 431 South Dearborn St., Chicago, Ill. Annual convention, June 9-16, Young's Pier, Atlantic City, N. J. Exhibit by Railway Supply Manufacturers' Association.
- Equipment Painting Section (including former activities of the Master Car and Locomotive Painters' Association).—V. R. Hawthorne, 431 South Dearborn St., Chicago, Ill. Next meeting, September 21-23, 1926.
- Division VI.—Purchases and Stores (including former activities of the Railway Storekeepers' Association).—W. J. Farrell, 30 Vesey St., New York, N. Y. Next meeting, June, 1926, Atlantic City, N. J.
- Division VII.—Freight Claims (including former activities of the Freight Claim Association).—Lewis Pilcher, 431 South Dearborn St., Chicago, Ill.
- Car Service Division.—C. A. Buch, 17th and H Sts., N. W., Washington, D. C.

- AMERICAN RAILWAY BRIDGE AND BUILDING ASSOCIATION.**—C. A. Lichty, C. & N. W. Ry., 319 N. Waller Ave., Chicago. Exhibit by Bridge and Building Supply Men's Association.
- AMERICAN RAILWAY DEVELOPMENT ASSOCIATION.**—A. L. Moorshead, Industrial Engineer, Eric R. R., New York, N. Y. Semi-annual meeting, December 3-4, 1925, Hotel Sherman, Chicago; annual meeting, June 23-25, 1926, Vancouver, B. C.
- AMERICAN RAILWAY ENGINEERING ASSOCIATION.**—(Works in co-operation with the American Railway Association Division IV.) E. H. Fritch, 431 South Dearborn St., Chicago. Annual convention, March 9-11, Chicago. Exhibit by National Railway Appliances Association.
- AMERICAN RAILWAY MASTER MECHANICS' ASSOCIATION.**—(See American Railway Association, Division V.)
- AMERICAN RAILWAY TOOL FOREMEN'S ASSOCIATION.**—G. G. Macina, C. M. & St. P. Ry., 11402 Calumet Ave., Chicago. Annual convention September 1-3, 1926, Hotel Sherman, Chicago. Exhibit by Supply Association of the American Railway Tool Foremen's Association.
- AMERICAN SHORT LINE RAILROAD ASSOCIATION.**—T. F. Whittelsey, 1319-21 F St., N. W., Washington, D. C.
- AMERICAN SOCIETY FOR STEEL TREATING.**—W. H. Eisenman, 4600 Prospect Ave., Cleveland, Ohio.
- AMERICAN SOCIETY FOR TESTING MATERIALS.**—C. L. Warwick, 1315 Spruce St., Philadelphia, Pa.
- AMERICAN SOCIETY OF CIVIL ENGINEERS.**—29 W. 39th St., New York. Regular meetings 1st and 3rd Wednesday in month, except July and August, 33 W. 39th St., New York.
- AMERICAN SOCIETY OF MECHANICAL ENGINEERS.**—Calvin W. Rice, 29 W. 39th St., New York. Railroad Division. A. F. Stuebing, Chief Engineer, Bradford Draft Gear Co., 23 W. 43rd St., New York.
- AMERICAN TRAIN DISPATCHERS' ASSOCIATION.**—C. L. Darling, 10 East Huron St., Chicago, Ill. Biennial convention, July 18, 1927.
- AMERICAN WOOD PRESERVERS' ASSOCIATION.**—E. J. Stocking, 111 West Washington St., Chicago. Next convention, January 26-28, 1926, Cleveland, Ohio.
- ASSOCIATION OF RAILWAY CLAIM AGENTS.**—H. D. Morris, District Claim Agent, Northern Pacific Ry., St. Paul, Minn. Annual meeting, May 18-20, 1926, Los Angeles, Calif.
- ASSOCIATION OF RAILWAY ELECTRICAL ENGINEERS.**—Jos. A. Andreuccetti, C. & N. W., Room 411, C. & N. W. Sta., Chicago. Exhibit by Railway Electrical Supply Manufacturers' Association.
- ASSOCIATION OF RAILWAY EXECUTIVES.**—Stanley J. Strong, 17th and H Sts., N. W., Washington, D. C.
- ASSOCIATION OF RAILWAY SUPPLY MEN.**—S. A. Witt, Detroit Lubricator Co., Chicago. Meeting with International Railway General Foremen's Association.
- ASSOCIATION OF RAILWAY TELEGRAPH SUPERINTENDENTS.**—(See American Railway Association, Division I.)
- ASSOCIATION OF TRANSPORTATION AND CAR ACCOUNTING OFFICERS.**—(See American Railway Association, Division II.)
- BRIDGE AND BUILDING SUPPLY MEN'S ASSOCIATION.**—Fred M. Condit, Fairbanks, Morse & Co., Chicago. Meeting with American Railway Bridge and Building Association.
- CANADIAN RAILWAY CLUB.**—C. R. Crook, 129 Charron St., Montreal, Que.
- CAR FOREMEN'S ASSOCIATION OF CHICAGO.**—Aaron Kline, 626 North Pine Ave., Chicago. Regular meetings, 2nd Monday in month, except June, July and August, Great Northern Hotel, Chicago.
- CAR FOREMEN'S ASSOCIATION OF LOS ANGELES.**—J. W. Krause, 514 East Eighth St., Los Angeles, Calif. Regular meetings, second Friday of each month, 514 East Eighth St., Los Angeles.
- CAR FOREMEN'S ASSOCIATION OF ST. LOUIS.**—R. E. Giger, 721 North 23rd St., East St. Louis, Ill. Meetings, first Tuesday in month at the American Hotel Annex, St. Louis.
- CENTRAL RAILWAY CLUB.**—Harry D. Vought, 26 Cortlandt St., New York. Regular meetings, 2nd Thursday each month, except June, July, August, Hotel Statler, Buffalo, N. Y.
- CHICAGO CLAIM CONFERENCE.**—Personal Injury Section.—F. L. Johnson, Chicago & Alton R. R., 340 Harrison St., Chicago. Meets 12:30 p. m., first Monday each month, Sherman Hotel, Chicago.
- CHIEF INTERCHANGE CAR INSPECTORS' AND CAR FOREMEN'S ASSOCIATION.**—A. S. Sternberg, Belt Ry. of Chicago, Polk and Dearborn Sts., Chicago.
- CHIEF INTERCHANGE CAR INSPECTORS' AND CAR FOREMEN'S SUPPLY MEN'S ASSOCIATION.**—Bradley S. Johnson, W. H. Miner, Rookery Bldg., Chicago, Ill. Meeting with Chief Interchange Car Inspectors' and Car Foremen's Association.
- CINCINNATI RAILROAD CLUB.**—W. C. Cooder, Union Central Bldg., Cincinnati, Ohio. Meetings, 2nd Tuesday in February, May, September and November.
- CLEVELAND STEAM RAILWAY CLUB.**—F. L. Frericks, 14416 Alder Ave., Cleveland, Ohio. Meetings, first Monday each month, Hotel Cleveland, Public Square, Cleveland.
- EASTERN RAILROAD ASSOCIATION.**—E. N. Bessling, 614 F St., N. W., Washington, D. C. Annual meeting May 13, 1926, Railroad Club, New York.
- FREIGHT CLAIM ASSOCIATION.**—(See American Railway Association, Division VII.)
- INTERNATIONAL RAILROAD MASTER BLACKSMITHS' ASSOCIATION.**—W. J. Mayer, Michigan Central R. R., Detroit, Mich. Next convention, August 17-19, 1926, Hotel Winton, Cleveland, O. Exhibit by International Railroad Master Blacksmiths' Supply Men's Association.
- INTERNATIONAL RAILROAD MASTER BLACKSMITHS' SUPPLY MEN'S ASSOCIATION.**—Edwin T. Jackman, 710 W. Lake St., Chicago.
- INTERNATIONAL RAILWAY CONGRESS.**—Office of Permanent Commission of the Association, 74 rue du Progrès, Brussels, Belgium. General secretary, P. Ghilain. Next session of the Congress, Spain, 1926.
- INTERNATIONAL RAILWAY FUEL ASSOCIATION.**—J. B. Hutchison, 1809 Capitol Ave., Omaha, Neb. Annual convention, May 11-14, 1926, Hotel Sherman, Chicago. Exhibit by International Railway Supply Men's Association.
- INTERNATIONAL RAILWAY GENERAL FOREMEN'S ASSOCIATION.**—Wm. Hall, 1061 W. Wabasha Ave., Winona, Minn.
- INTERNATIONAL RAILWAY SUPPLY MEN'S ASSOCIATION.**—F. P. Roesch, 1942 McCormick Bldg., Chicago, Ill. Meeting with International Railway Fuel Association.
- MASTER BOILER MAKERS' ASSOCIATION.**—Harry D. Vought, 26 Cortlandt St., New York. Next meeting, May 25-28, 1926, Hotel Statler, Buffalo.
- MASTER CAR AND LOCOMOTIVE PAINTERS' ASSOCIATION.**—(See A. R. A., Division V.)
- MASTER CAR BUILDERS' ASSOCIATION.**—(See A. R. A., Division V.)
- MOBILE TRAFFIC & TRANSPORTATION CLUB.**—T. C. Schley, 71 Conti St., Mobile, Ala. Regular dinner meetings, 6 p. m., on 2nd Thursday of each month, Cathon Vineyard, Mobile, Ala.
- NATIONAL ASSOCIATION OF RAILWAY TIE PRODUCERS.**—J. S. Penney, T. J. Moas Tie Company, 720 Security Bldg., St. Louis, Mo. Next convention, January 28-29, 1926, Hotel Cleveland, Cleveland, Ohio.

NATIONAL ASSOCIATION OF RAILROAD AND UTILITIES COMMISSIONERS.—James B. Walker, 49 Lafayette St., New York. Annual convention, November 9, 1926, Asheville, N. C.

NATIONAL FOREIGN TRADE COUNCIL.—O. K. Davis, 1 Hanover Square, New York. Annual convention, April 28-30, 1926, Charleston, S. C.

NATIONAL HIGHWAY TRAFFIC ASSOCIATION.—Elmer Thompson, 12 East 53rd St., New York.

NATIONAL RAILWAY APPLIANCES ASSOCIATION.—C. W. Kelly, 825 South Wabash Ave., Chicago. Annual exhibition, March 8-11, Coliseum, Chicago, at convention of American Railway Engineering Association.

NATIONAL SAFETY COUNCIL.—Steam Railroad Section: E. R. Cott, Safety Agent, Hocking Valley Ry., Columbus, Ohio.

NEW ENGLAND RAILROAD CLUB.—W. E. Cade, Jr., 683 Atlantic Ave., Boston, Mass. Regular meetings, 2nd Tuesday in month, except June, July, August and September, Copley-Plaza Hotel, Boston, Mass.

NEW YORK RAILROAD CLUB.—Harry D. Vought, 26 Cortlandt St., New York. Regular meetings, 3rd Friday in month, except June, July and August, at 29 W. 39th St., New York.

PACIFIC RAILWAY CLUB.—W. S. Wollner, 64 Pine St., San Francisco, Cal. Regular meetings, 2d Thursday in month, alternately in San Francisco and Oakland.

RAILWAY ACCOUNTING OFFICERS' ASSOCIATION.—E. R. Woodson, 1116 Woodward Building, Washington, D. C. Next annual convention, June 8-11, 1926, Chateau Frontenac, Quebec, Canada.

RAILWAY BUSINESS ASSOCIATION.—Frank W. Noxon, 600 Liberty Bldg., Broad and Chestnut Sts., Philadelphia, Pa. Annual dinner, November 11, 1925, Hotel Commodore, New York.

RAILWAY CAR MANUFACTURERS' ASSOCIATION.—W. C. Tabbert, 61 Broadway, New York.

RAILWAY CLUB OF PITTSBURGH.—J. D. Conway, 515 Grandview Ave., Pittsburgh, Pa. Regular meetings, 4th Thursday in month, except June, July and August, Fort Pitt Hotel, Pittsburgh, Pa.

RAILWAY DEVELOPMENT ASSOCIATION.—(See Am. Ry. Development Assn.)

RAILWAY ELECTRICAL SUPPLY MANUFACTURERS' ASSOCIATION.—Edward Wray, 9 S. Clinton St., Chicago. Annual meeting with Association of Railway Electrical Engineers.

RAILWAY EQUIPMENT MANUFACTURERS' ASSOCIATION.—Joseph Sinkler, Pilot Packing Co., Peoples Gas Bldg., Chicago. Meeting with Traveling Engineers' Association.

RAILWAY FIRE PROTECTION ASSOCIATION.—K. R. Hackett, Baltimore & Ohio R. R., Baltimore, Md. Annual meeting, October 12, 1926.

RAILWAY REAL ESTATE ASSOCIATION.—C. C. Marlor, Room 1243, Transportation Building, Chicago.

RAILWAY SIGNAL ASSOCIATION.—(See A. R. A., Division IV., Signal Section).

RAILWAY STOREKEEPERS' ASSOCIATION.—(See A. R. A., Division VI.)

RAILWAY SUPPLY MANUFACTURERS' ASSOCIATION.—J. D. Conway, 1841 Oliver Bldg., Pittsburgh, Pa. Meets with Mechanical Division, A. R. A., June 9-16, Atlantic City, N. J.

RAILWAY TELEGRAPH AND TELEPHONE APPLIANCE ASSOCIATION.—G. A. Nelson, 30 Church St., New York. Meets with Telegraph and Telephone Section of A. R. A., Division I.

RAILWAY TREASURY OFFICERS' ASSOCIATION.—L. W. Cox, Commercial Trust Bldg., Philadelphia, Pa.

ROADMASTERS' AND MAINTENANCE OF WAY ASSOCIATION.—T. F. Donahoe, Gen. Supvr. Road, Baltimore & Ohio, Pittsburgh, Pa. Next convention, November 16-18, 1926, Chicago. Exhibit by Track Supply Association.

ST. LOUIS RAILWAY CLUB.—B. W. Frauenthal, Union Station, St. Louis, Mo. Regular meetings, 2nd Friday in month, except June, July and August.

SIGNAL APPLIANCE ASSOCIATION.—F. W. Edmunds, Sunbeam Electric Manufacturing Company, New York City. Meeting with American Railway Association, Signal Section.

SOUTHEASTERN CARMEN'S INTERCHANGE ASSOCIATION.—J. E. Rubley, Southern Railway Shop, Atlanta, Ga. Meets semi-annually.

SOUTHERN AND SOUTHWESTERN RAILWAY CLUB.—A. T. Miller, P. O. Box 1205, Atlanta, Ga. Regular meetings, 3rd Thursday in January, March, May, July, September and November, Piedmont Hotel, Atlanta.

SOUTHERN ASSOCIATION OF CAR SERVICE OFFICERS.—J. L. Carrier, Car Serv. Agent, Tenn. Cent. Ry., 319 Seventh Ave., North Nashville, Tenn.

SUPPLY ASSOCIATION OF AMERICAN RAILWAY TOOL FOREMEN'S ASSOCIATION.—W. R. Mau, Vanadium Alloys Steel Co., Latrobe, Pa.

TRACK SUPPLY ASSOCIATION.—W. C. Kidd, Ramapo-Ajax Corporation, Hillburn, N. Y. Meets with Roadmasters' and Maintenance of Way Association.

TRAVELING ENGINEERS' ASSOCIATION.—W. O. Thompson, 1177 East 98th St., Cleveland, Ohio. Annual meeting, September 14-17, 1926, Hotel Sherman, Chicago. Exhibit by Railway Equipment Manufacturers' Association.

WESTERN RAILWAY CLUB.—Bruce V. Crandall, 226 West Jackson Boulevard, Room 1001, Chicago. Regular meetings, 3rd Monday each month, except June, July and August.

WESTERN SOCIETY OF ENGINEERS.—Edgar S. Nethercut, 1735 Monadnock Block, Chicago, Ill.

THE PANAMA-PACIFIC STEAMSHIP LINE, controlled by the International Mercantile Marine, announces that an order has been given to the Newport News Shipbuilding & Dry Dock Company, for the construction of a steamship, of 22,000 tons, for passenger and freight service between the east and west coasts, through the Panama Canal; and it is stated that the company expects to build three ships of this kind, at a total expenditure of \$21,000,000.

THE "BROADWAY LIMITED" and the "American," of the Pennsylvania are to be completely re-equipped from end to end with brand new cars. The Pullman Company is turning out 60 cars for this purpose on rush orders. The new cars will offer many original and novel features of design, including a women's lounge and shower bath and a private office for business men. Interior decoration of a new type will provide a restful atmosphere of soft color harmonies. Of the new cars, 32 will be used on the "Broadway," the 20-hour train between New York and Chicago and 28 on the "American," the 24-hour train between New York and St. Louis.

Traffic News

"The Beautiful Valley of the Lower Rio Grande" is the title of a 63-page illustrated booklet which has been issued by the Gulf Coast Lines, describing the possibilities and developments of the Rio Grande valley of Texas. Emphasis is placed on the results of irrigation, crops and cattle. In addition, places of beauty and recreation are described.

The Transportation division of the American Railway Association has issued a 17-page pamphlet with 17 illustrations entitled "Bulk Grain" for the guidance of shippers and consignees. The booklet describes methods for inspecting, preparing and coopering cars and for releasing grain doors in cars; also instructions for the protection of grain doors.

R. M. McWilliams, general freight agent of the Missouri Pacific, with headquarters at Little Rock, Ark., has been promoted to executive general agent, with headquarters at New Orleans, La., a newly created position. H. L. Traber, formerly one of the receivers of the Kansas, Oklahoma & Gulf, has been appointed general freight agent at Little Rock in place of Mr. McWilliams.

"Ultimate efficiency of inland water transportation must be sought in co-ordination with railroad service rather than as an independent, costly, hostile medium of transportation," said Theodore Brent, traffic manager of the Mississippi-Warrior Boat Service, before the Association of Commerce of Chicago on October 28. Mr. Brent particularly urged the opening up of a waterway from Chicago through to the Gulf of Mexico.

"Northern New Yorker" is the name of a new train which has been put on by the New York Central leaving Massena, N. Y., for Syracuse at 7:30 a. m., and returning in the afternoon to arrive in Massena at 8:35 p. m. By this extension of the day express train service, north from Watertown, the people of Massena, Ogdensburg and other towns will have convenient means of going to Syracuse and returning the same day. The train will have a broiler buffet parlor car. Mrs. W. H. Gardner receives a prize of \$50 for having proposed the most acceptable name for this train. Among the thousand persons who competed for the prize there were 62 who proposed "The Northerner."

Passenger Traffic Officers Meet

The operation of bus lines received considerable attention at the annual meeting of the American Association of Passenger Traffic Officers at New Orleans, La., on October 29 and 30. A number of speakers recommended the development of a system of bus lines by the railroads to co-operate with their rail lines and thereby meet the competition offered by individual bus lines.

L. W. Landman, passenger traffic manager of the New York Central, Chicago, was elected president of the association. Others elected were vice-president, John N. Cornatzar, passenger traffic manager of the St. Louis-San Francisco, St. Louis, Mo., and secretary, W. C. Hope, passenger traffic manager of the Central of New Jersey, New York City.

Nebraska to New York—Special Breakfast Train

A special train sponsored by the Nebraska Poultry, Butter and Egg Association, containing live and dressed poultry, butter and eggs, was shipped from Omaha, Neb., to New York by way of Chicago over the Chicago, Rock Island & Pacific and the Erie on November 1. The purpose of the special was to establish a closer trade relationship between the farming industries of Nebraska and the eastern market. Upon its arrival in Chicago on November 2 the train was met by a delegation from the Chicago Central Market, the Produce Exchange, the Chicago Poultry Board, the Chicago Poultry Merchants' Association, the Chicago Produce Merchants Cartage Company, the Mercantile Exchange, the National Live Poultry Shippers' Association and the National Live Poultry, Butter and Egg Association. The train contained 40 cars, 3 of which were sleeping cars for the accommodation of

the delegation of representatives of the Nebraska Poultry, Butter and Egg Association and the railroad. The special was run on regular freight schedule time, and stops were made only long enough to feed and water the live poultry. The train carried a banner reading: "This train carries a \$500,000 breakfast for New York, ordered from Nebraska, sponsored by the Nebraska Poultry, Butter and Egg Association. Will W. Blackman, Fremont, Neb., President." It arrived at New York on the evening of November 4 at 8 o'clock.

Record Football Traffic on Illinois Central

A total of 10,970 passengers were carried into Champaign, Ill., on October 23 and 24, by the Illinois Central for the Illinois-Michigan football game, and 11,313 were carried out on October 24, 25 and 26. On October 23 and 24, 9,944 persons traveled to Champaign from Chicago on 10 regular trains and 22 special trains.

Ticket Agents to Meet at St. Petersburg

The seventh annual convention of the American Association of Railroad Ticket Agents will be held at St. Petersburg, Fla., on November 10, 11 and 12. The principal addresses will be made by Elisha Lee, vice-president of the Pennsylvania, James Keeley, assistant to the president of the Pullman Company, W. A. Tayloe, passenger traffic manager of the Southern, and W. J. Craig, passenger traffic manager of the Atlantic Coast Line. N. L. Bassett, ticket agent at the Union Station, Indianapolis, Ind., will speak on "Selling Tickets"; A. G. Bloom, ticket agent at the Union Station, Omaha, Neb., on "Training Our Clerks for Efficiency," and Lewis Bluestone, ticket agent of the New York Central at Syracuse, on "The Reclassification of Ticket Clerks." W. J. Rodgers, chief clerk of the Southwestern Passenger Bureau, will conduct an open forum on "What Has Our Association Accomplished and Where Are Our Possibilities?"

New England Board Meets

The New England Shippers' Advisory Board held its first regular meeting at Hartford, Conn., on October 30, with an attendance of 432. G. C. Randall, speaking for the car service division of the American Railway Association, gave a sketch of present traffic conditions in New England. E. J. Pearson, president of the New York, New Haven & Hartford, described conditions on his road and expressed confidence that embargoes would not be necessary this year.

The New England Board was organized at Boston on May 7. William F. Garcelon, secretary-treasurer of the Arkwright Club, Boston, is general chairman, and Francis J. Dowd, assistant transportation manager of the Associated Industries of Massachusetts, is general secretary. There are 57 commodity committees, the number of which indicates the diversified industry of New England. The enthusiasm with which the enterprise has been taken up by New England manufacturers and merchants is attested by the large attendance at this first meeting.

Reports were made by the various commodity committee chairmen and by representatives of the railroads. Richard T. Higgins, chairman of the Public Utilities Commission of Connecticut, addressed the meeting on "The Joint Responsibilities of Carriers and Shippers." The next meeting will be held in January at Portland, Maine.

General Embargo Placed Against Freight for Florida

At a meeting in Jacksonville, Fla., on October 29 of representatives of all Florida railroads, called by M. J. Gormley, chairman of the Car Service Division of the American Railway Association, and at which J. B. Ford, agent of the Bureau of Service of the Interstate Commerce Commission was present, plans for the movement of the citrus and other perishable traffic of Florida were considered. As the perishable traffic will be moving in considerable volume early in November it was determined that, in view of the primary importance to Florida of the perishable movement, and to avoid any interference with that movement by the accumulation of other traffic, as well as to provide track capacity for

refrigerator equipment it was necessary to extend to all points in the state a general embargo against inbound movement of traffic which is in effect at the larger points in the state. This embargo does not apply to livestock, perishables, petroleum and its products, foodstuffs for human and animal consumption, crate material and wrapping material for fruits and vegetables, fertilizer and fertilizer materials. The information available showed about 7,000 carloads of freight held at Jacksonville and points north for Florida destinations that was loaded prior to present embargoes and it was decided that this accumulation must be cleaned up in advance of the perishable movement. Permits will be issued for movement of general traffic to the extent of the ability of consignees to unload and railroads to handle and at the same time insure prompt movement of perishable traffic. As soon as the present accumulation is cleaned up it is believed that there will be no difficulty in consignees securing permits for the movement of freight for immediate requirements. It will prevent the movement into Florida of large quantities of miscellaneous freight for which sale is arranged after arrival, and which practice is said to be largely responsible for the present congested conditions in the state.

Northwest Regional Advisory Board

Discusses Sampling of Grain

As a result of the practice of marketing wheat according to its protein value, more cars are being stopped for sampling than in the past and during the current season many cars have been tied up at the sampling points for from three to seven days. Many shippers have recognized the importance of the protein content in determining the value of wheat, and as a result wheat marketing practices are being changed which in turn are resulting in new transportation problems. These conclusions were drawn at a meeting of the Northwest Regional Advisory Board at Grand Forks, N. D., on October 27. It was pointed out that some of the congestion at sampling points could be avoided if shippers would have their wheat tested for protein content before shipping it, rather than holding it up en route for sampling. Consideration was given marketing on the basis of the protein value in connection with the discussion of the congestion of traffic at sampling points during 1925 and the likelihood of increased congestion at such points in the future.

The joint terminal grain committee reported that the peak grain movement in the territory of the Northwest Regional Advisory Board had been handled without a single major complaint regarding car supply or distribution during the entire movement. The movement this year was much more difficult to handle than that of last year since shipments started two weeks earlier and reached a peak almost immediately, due to the crops maturing west of the Missouri river earlier than in the territory east of the river. The evolution of marketing practices which required the holding of wheat at sampling terminals for disposition until samples were sent to primary markets and the grade and protein content ascertained in order to determine which of the primary markets were the most favorable for the sale of the grain from a protein or premium standpoint also made the movement more difficult to handle.

A total of 124,619,661 bu. of wheat were handled at Minneapolis and Duluth during August and September this year as compared with 110,593,426 bu. in the same two months last year. The peak period in 1924 lasted until December 15, while this year it was over on October 5. Last year the country elevators were practically shipped out at this time, while this year they are full and are only shipping the overflow to avoid becoming blocked. The movement last year was the most successful in the history of the northwest and required only four embargoes. This year, with a heavier movement, the same results were accomplished without the necessity of a single embargo. The efficient handling of shipments this year was accomplished through the co-operation of the railroads in building up in advance a sufficient grain car supply, of the marketing agencies, the terminal and country elevators and the farmer shippers who loaded and released grain cars with the least possible delay, and of the Minnesota State Inspection Department, who sampled and inspected the grain on Sundays and holidays, and strained their normal rules where necessary in order to assist the movement and release of grain cars. The next meeting of the board will be held in Minneapolis, Minn., on January 26.

Commission and Court News

Interstate Commerce Commission

S. P. Permitted to Operate Boats to Public Docks at Oakland, Alameda

On application of the Southern Pacific and the Central Pacific under the provisions of section 5 of the interstate commerce act, the commission has ruled that the extension of the operation of the Southern Pacific steamboats to and from public docks, wharves and piers at Alameda, Oakland, Berkeley and Emeryville, Calif., on the east side of San Francisco Bay, is in the interest of the public and of advantage to the convenience and commerce of the people and will neither exclude, prevent nor reduce competition on the route by water.

Further Hearings on Coal Rates to Eastern States

Because of the demand for fuel as a result of the anthracite strike the Commission has decided to extend its general investigation of anthracite and bituminous coal with a view, apparently, to including in its study the lower freight rates ordered last summer on soft coal to New England and the Middle Atlantic states; on anthracite coal from Pulaski, Va., and on high volatile splint coal from the Kanawha and Coal River districts of West Virginia. Complaints of fuel shortage for domestic and other uses have been made in Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Pennsylvania, Delaware, Maryland and the District of Columbia. A hearing will be held on November 12 in New York (233 Broadway) before Commissioner Campbell and Examiner Koch.

As to bituminous coal from the New River, Pocahontas and Tug River districts of West Virginia it is proposed to consider the establishment of through routes additional to those required by the order of July 22.

United States Supreme Court

Limitation of Carrier's Liability—

Agent's Ignorance of Value

In an action against an express company for the value of a parcel received by it for carriage but not delivered, the company admitted liability for \$50, but alleged that it could not be held for more, because the receipt it gave fixed that sum as the value of the goods and a higher value would have required the payment of a higher rate.

The Georgia Supreme Court, by an evenly divided court, affirmed a judgment against the company for \$100, interest and costs, and the case was brought before the Supreme Court of the United States on writ of certiorari.

Reversing this judgment, the Supreme Court says: "The goods were delivered by an agent and after conversation between him and the express agent the latter put \$50 into the receipt as the value, neither party having any clear knowledge, and the receipt later was handed to and bound the sender of the goods. Great Northern Ry. Co. v. O'Connor, 232 U. S. 508, 514. The tariffs filed with the Interstate Commerce Commission were offered to show the rates, but were excluded, and the judgment was affirmed seemingly on the ground that the sending agent was not shown to have known that a lower valuation secured a lower rate, and that the carrier knew that the agent was ignorant of the true value of the goods. No argument is made for the respondent and it is plain that the judgment cannot be sustained. The carrier's knowledge of the agent's ignorance of the value was immaterial. It acted in good faith. The carrier's tariffs should have been admitted and bound both parties. K. C. S. v. Carl, 227 U. S. 639, 652, 653. Southern Express v. Byers, 240 U. S. 612, 614. Am. Ry. Ex. v. Lindenburg, 260 U. S. 584. G. H. & S. H. v. Woodbury, 263 U. S. 357, 360. W. U. v. Esteve Brothers & Co., 256 U. S. 566."—A. R. Express Co. v. Daniel.—Decided October 26, 1925. Opinion by Mr. Justice Holmes.

Foreign Railway News

Russia Buying American Mine Locomotives

The Westinghouse Electric International Company has received an order from the Amtorg Trading Corporation, the commercial representatives of the Soviet government in America, for 25 mine locomotives to be used in connection with the electrification of the coal mines in the Donetz District, near the Black Sea, in Russia. Part of these locomotives will obtain their power from trolley wires, and the remainder are of the storage battery type. A distinctive feature is that they will have adjustable wheel gages so that they can be operated on tracks of from 24 to 30 inches wide.

Proposed Reorganization of Central of Brazil as a Semi-Private Company

A bill has been presented to the Brazilian Chamber of Deputies, which, if passed, will result in the transformation of the Estrada de Ferro Central do Brazil (the most important railroad in the country, now owned and operated by the federal government) into a semi-private corporation, the capital stock of which would be held by its employees and officers, as well as by the general public and the government, according to Consul-General Gaulin at Rio de Janeiro.

The provisions of the bill are as follows:

The executive is authorized to transform the Central of Brazil Railway into a corporation.

The property of the railway, consisting of all material, rolling and fixed, is evaluated at 624,000 contos, which amount shall constitute the new company's capital, classed as follows: (a) 174,000 debentures of the nominal value of one conto each; (b) 1,500,000 privileged shares of 100 milreis each, yielding 5 per cent annual interest; (c) 1,500,000 preferential shares of 100 milreis each, yielding 3 per cent annual interest; (d) 1,500,000 common stock shares of 100 milreis each.

The 174,000 debentures are to remain in the hands of the government, guaranteed by a first mortgage on the property above described.

Privileged shares to the number of 1,300,000 shall be open to public subscription; those unsubscribed shall remain in the hands of the government; 200,000 are to be distributed among the employees and officials of the road in proportion to their salaries.

Preferential shares numbering 1,400,000 shall be open to public subscription, or shall remain in the hands of the government if not subscribed to; 100,000 are to be distributed among the employees and officials of the road in proportion to their salaries.

The debentures shall not bear interest except after payment of interest on the privileged and preferential shares.

The liquid profit to be distributed shall be constituted by the excess of the gross revenue over the operating expenses, after deducting the percentages provided for the reserve fund, maintenance, and equipment.

The road is to be managed by a directorate consisting of three members elected by the corporation in the usual manner, assisted by three engineers, one workman elected by his fellow mechanics, and an expert accountant.

The government, as principal stockholder, reserves the right to nominate the director general of the road, whose functions shall be defined in the company's statutes, which are to be framed by the directorate and approved by the general stockholders.

Proceeds to the amount of 20,000 contos of the public stock subscription shall be delivered to the directorate for use as operating capital; the remainder shall be deposited in the paper money redemption fund.

If the public stock subscription does not yield appreciable results, the government shall advance 10,000 contos to the company.

The interest paid on debentures and shares belonging to the government shall be applied to the public debt service.

The new company shall be granted all privileges now enjoyed by the Central of Brazil Railway, except that of exemption from customs duties.

The government shall deliver, in the form of subvention, 50

per cent of the amount of customs duties paid by the road.

All free passes and the free carriage of freight shall be abolished. The government shall pay 50 per cent of the ordinary tariff for all such passes it may issue.

Miscellaneous Notes

The following items have been reported to the Bureau of Foreign and Domestic Commerce from its agents in various parts of the world.

A new type of locomotive has been designed for the Finnish Railways. The new locomotives will be used for comparatively light roads in the north of the country. Probably 16 of this type will be used, but it is not known whether the building will be given to a domestic or a foreign firm.

Motor vehicles are being tried out on the Czechoslovak Railways. The new cars have internal combustion engines, with six cylinders developing 100 h. p. The fuel used is the Czechoslovak product "Dynalkol," which is a substitute motor fuel consisting of 60 parts of 90 per cent benzine, 40 parts of 97 per cent alcohol mixed by a special process. (Some authorities state that either 1 per cent of naphthaline tetraline or 5 per cent ether has been added.)

Reduced railway rates in Hungary and Serbia have been granted on exports and imports between the two countries. The commodities affected are, with regard to export from Hungary, sugar, lumber, leguminous plants, seeds, flour, beer, soap, and iron manufactures, and with regard to import into Hungary, rubber, jute, coffee, lead, cotton, and wood not of European origin.

A bi-weekly express train service from Paris to Vladivostok via Poland, was discussed at the Polish-Soviet traffic conference at Moscow during September.

Twenty-six American locomotives have been sold in Colombia since January, 1923, out of a total of 36. Six of the others were German and four English.

A railway from Harbin to Hailunhsien, Manchuria, will be constructed at a cost of \$5,000,000 gold. The railway will be of standard gage. Firms interested in the sale of material must send representatives to Harbin or appoint a local firm as representatives.

The Argentine State Railway expansion bill has been approved by the House Committee and the possibility of its passage seems brighter. It would carry a loan of 509,000,000 pesos paper, in series of 60,000,000 pesos annual, the bonds to bear interest at 5 per cent.

The Nakskov Shipbuilding Company, Denmark, is building Diesel locomotives, and has now under construction four of from 150 to 200 horsepower. Several small Danish private railways are considering the use of these locomotives to replace steam.

Guatemala-Mexico train service was improved on September 11, when the National Railways of Mexico inaugurated a daily service to meet that on the Guatemalan side, instead of the twice-a-week service previously maintained.

Progress Slow in China

Due to the closing down of the Peking Syndicate mines by a walk-out of the employees, the construction of the extension of the Taokow-Chinghua line has been halted. The principal traffic of this line is coal from these mines and the financial agents for the extension is the Syndicate. Construction of the Mukden-Hailun railway, in Manchuria, is proceeding rapidly according to Chinese standards. The rail and twelve second-hand locomotives have been purchased from British agents.

Following the settlement of the French "gold franc" controversy, a settlement with Belgium has been agreed upon along similar lines. During the war the payment of the Boxer Indemnity was postponed for five years. When time for resumption of payments arrived, the rate for "telegraphic transfer" of francs was only a fraction of the pre-war rate. The French government thereupon insisted upon payment in gold. The Belgian government followed the lead of France. The settlement with Belgium provides (1) that China shall pay Belgium at the gold rate, using American dollars as the medium, (2) that Belgium will apply to her national purposes only the portion that represents the "telegraphic transfer" cost, and (3) that the remainder shall be devoted by Belgium to the rebuilding of the Yellow river bridge of the Peking-Hankow railway. As the unpaid portion of the Belgian

share of the Boxer Indemnity aggregates only about \$3,000,000 (U. S. gold) it is evident that the total amount available for the Yellow river bridge is not sufficient for the material to be purchased.

Marshal Feng Yu-Hsiang has begun the construction of the earthwork of the extension of the Peking-Suiyuan line from Paotou towards Ninghsia. He is using the engineer corps of his army as laborers under the direction of the engineers of the Peking-Suiyuan railway. About twenty miles have been completed, according to recent reports.

The "Republican" armies under Feng Yu-Hsiang and his allies are taxing the movement of coal on the Peking-Hankow and Peking-Suiyuan lines at the rate of \$200 per 40-ton car. Merchants having particularly friendly relations with commanders can secure personal concessions, but the general average result is an increase in the price of coal at Peking and similar points of \$5.00 per ton.

Something over a month ago a head-on collision between the semi-weekly express from Hankow and the night mail passenger train from Peking resulted in the demolition of two baggage cars, a mail car and the death of twelve employees, including two postal clerks. The presence on one of the trains of the foreign accountant of the Peking-Hankow line, the American adviser to the Ministry of Communications and a representative of the Ministry, resulted in an immediate report which fixed responsibility upon the engineman of the express for running past signals set at stop. His body was found in the debris along with others who were known to have been asleep in the baggage car. A certain degree of responsibility was also assessed against the driver of the mail train for refusing to carry out a switching movement when first ordered, and which if made in time would have put his train in the clear. Yet, so powerful is the enginemen's guild that in order to assess discipline against that department, the railway was forced to punish the stationmaster also and dismiss the chief traffic inspector.

The Ministry of Communications has ordered from a Belgian firm twenty-one refrigerator cars, delivery of which is expected about April, 1926. The cars are to be ice-cooled and have a capacity of 22 metric tons. Of these twenty-one cars, eight are assigned for service into and out of Shanghai, nine between Tientsin, Pukow and Tsing-tau and four to the Peking-Mukden line. They will be used principally in connection with import and export, fruit transport and domestic fish distribution. Each car probably will be divided into two compartments. For the time being each line is to be allowed to make such arrangements and to charge such rates as it deems best with a view to the inauguration of the service.

The sessions of the Sixth General Traffic Conference have just come to an end after ten days of work. During the course of the conference it was disclosed that the Ministry of Communications has adopted the definite policy of requiring the railways to accept responsibility for all the usual risks incidental to transportation, similar to the situation in America and in England, in contrast to the system of "owners' risk" which has prevailed heretofore. Since 1921, shippers have had the privilege of electing "railway risk" for which a surcharge of 10 per cent on the freight was collected. The railways have accepted the Ministry's proposal in principle and a committee has been authorized to make a comparison of charges based on the insurance principle with those levied on the surcharge principle at the rate of 5 per cent, which rate will go into effect pending a definite ruling by the Ministry. The Peking-Mukden line reports lack of success with the "railway risk" scheme due to the fact that *likin* authorities have no published schedule of taxes, and hence a representative of the shipper must accompany the goods to "bargain" with these tax collectors. Hence, he can at the same time assume the role of a watchman.

EIGHTY-TWO MILES for one dollar is the passenger fare between Austin, Tex., and San Antonio, according to a recent press despatch, which says that there are 95 buses running between the two cities. Passenger travel, says the despatch, "has been greatly stimulated as a result of a rate war among the three motorbus lines that operate between the two cities. Several days ago one of the companies reduced its one-way fare from \$2.75 to \$1.50. The other lines met the cut by dropping the fare to \$1. The two railroads (the M. K. T. and the I. G. N.) are doing virtually no passenger business between Austin and San Antonio. The fact that there is no law in Texas regulating motorbus lines enables these lines to fix their own rates."

Equipment and Supplies

Locomotives

THE ST. LOUIS-SAN FRANCISCO is inquiring for 15 Mikado type and 10 Mountain type locomotives.

THE NORFOLK & WESTERN will build 10 Mountain type passenger locomotives in its Roanoke shops.

THE CENTRAL CESPEDES (Cuba) has ordered one consolidation type locomotive from the Baldwin Locomotive Works.

THE CONSOLIDATED RAILROADS OF CUBA have ordered 6 Mikado type locomotives from the Baldwin Locomotive Works.

F. C. DEL TOLINAS (Colombia) has ordered 4 consolidation type locomotives from the Baldwin Locomotive Works.

THE VARN TURPENTINE & CATTLE COMPANY, INC., has ordered one Prairie type locomotive from the Baldwin Locomotive Works.

THE DELAWARE, LACKAWANNA & WESTERN has ordered two 60-ton, 300 hp. oil-electric locomotives from the Ingersoll-Rand Company, American Locomotive Company and General Electric Company; these companies co-operate in its manufacture.

Freight Cars

THE ST. LOUIS SOUTHWESTERN is inquiring for 500 underframes for box cars.

THE BIRMINGHAM SOUTHERN is inquiring for 100 gondola cars of 70 tons' capacity.

THE CONLEY TANK CAR COMPANY is inquiring for 200 tank cars of 40 tons' capacity.

THE NEW YORK, CHICAGO & ST. LOUIS has ordered 100 underframes from the Pennsylvania Car Company.

THE GREAT NORTHERN has ordered 1,000 steel underframes for freight cars, from the Siems-Stembel Company.

THE CENTRAL OF BRAZIL is inquiring through the car builders for about 500 freight cars of 25 and 45 metric tons' capacity.

THE CONSOLIDATED RAILROADS OF CUBA have placed orders for 50 box cars and 25 stock cars, both of 40 tons' capacity, with the American Car & Foundry Company.

THE ST. LOUIS-SAN FRANCISCO has ordered 2,000 box cars from the American Car & Foundry Company; 500 automobile cars from the Pullman Car & Manufacturing Corporation; 500 box cars from the General American Car Company; 500 gondola cars from the Tennessee Coal, Iron & Railroad Company and 500 automobile cars from the Mt. Vernon Car Manufacturing Company. The inquiries for this equipment were reported in the *Railway Age* of September 19 and October 10.

Passenger Cars

THE BOSTON ELEVATED is inquiring for 100 car bodies and trucks.

THE NATIONAL RAILWAYS OF MEXICO are inquiring for 5 combination baggage and mail cars.

THE TEXAS & NEW ORLEANS is inquiring for 3 baggage cars, 3 first-class passenger coaches and 3 second-class coaches.

THE CONSOLIDATED RAILROADS OF CUBA have ordered 5 first-class passenger cars and 8 second-class passenger cars from the American Car & Foundry Company.

THE ST. LOUIS-SAN FRANCISCO has ordered 14 coaches from the American Car & Foundry Company. Inquiry for this equipment was reported in the *Railway Age* of October 17.

CHESAPEAKE & OHIO has ordered three all-steel postal cars from the Bethlehem Shipbuilding Corporation, Ltd. Inquiry for this equipment was reported in the *Railway Age* of September 5.

THE NORFOLK & WESTERN will buy 43 passenger train cars including 18 coaches; 6 combination passenger and baggage cars; 4 combination baggage and mail cars and 15 baggage express cars.

Signaling

THE BALTIMORE & OHIO has ordered from the Union Switch & Signal Company an electric interlocking for Newton Falls, Ohio; 18 working levers. The order includes ten switch-and-lock movements.

THE MISSOURI PACIFIC has ordered from the General Railway Signal Company material for an automatic block system, light signals, to be installed on its line between Poplar Bluff, Mo., and Clear Lake Junction, Ark., 244 miles.

THE ILLINOIS CENTRAL has ordered from the Union Switch & Signal Company an electro-mechanical interlocking, nine mechanical levers and four electric units, for Burnside, Ill. This plant will have 15 color-light signals.

Month—1924	LOCOMOTIVES ORDERED,			INSTALLED AND RETIRED				On order first of following month	Building in R. R. shops
	Domestic orders reported during month	Installed during month	Aggregate tractive effort	Retired during month	Aggregate tractive effort	Owned at end of month	Aggregate tractive effort		
July	83	197	10,590,558	113	3,354,456	65,008	2,576,433,377	401	63
August	8	229	12,513,395	166	5,346,176	65,062	2,583,372,980	324	50
September	101	160	7,061,560	151	4,351,378	65,071	2,586,083,994	285	37
October	135	113	5,743,775	220	5,712,633	64,964	2,586,106,026	358	76
November	90	181	8,460,795	263	7,749,794	64,882	2,586,826,278	265	70
December	172	295	12,311,451	304	9,724,426	64,871	2,589,358,971	287	64
Total for year 1924	1,413*	2,246	.....	2,148	.....	.....	.....	...	..
January, 1925	27	167	7,455,971	213	6,242,079	64,824	2,590,525,478	280	81
February	49	125	6,233,494	169	5,118,878	64,779	2,591,618,849	293	77
March	106	138	6,249,721	170	4,888,933	64,747	2,592,979,637	315	83
April	84	171	7,498,252	409	13,126,135	64,509	2,587,347,354	340	82
May	51	147	7,930,840	172	5,329,461	64,484	2,589,912,779	329	80
June	16	179	9,746,100	224	8,296,659	64,435	2,591,286,720	279	66
July	39	139	7,208,534	170	5,602,619	64,420	2,593,971,635	250	59
August	26	147	8,384,262	210	5,866,368	64,357	2,596,489,549	193	45
September	86*	129	7,981,464	229	8,601,871	64,257	2,595,729,142	237	37
October	199	.....	.....	.....	.....	.....	.....	..	..
Total for 9 months	1,342	.....	.....	.....	.....	.....	.....	..	..
Total for 10 months	683	.....	.....	.....	.....	.....	.....	..	..

Details as to orders from *Railway Age* weekly reports. Figures include all domestic orders placed with builders and railroad shops, but not rebuilt equipment.

Figures as to installations and retirements prepared by Car Service Division, A. R. A., published in Form C. S. 56 A-1. Figures cover only those roads reporting to the Car Service Division. They include equipment received from builders and railroad shops. Figures of installations and retirements alike include also equipment rebuilt to an extent sufficiently so that under the accounting rules it must be retired and entered in the equipment statement as new equipment. Figures as to orders as given in first column of table are not therefore comparable with figures relating to installations given in succeeding columns.

* Corrected figure.

Supply Trade News

Homer D. Williams, president of the Carnegie Steel Company, Pittsburgh, Pa., has resigned to become president of the Pittsburgh Steel Company.

F. S. Hartwell has been appointed representative of the Davis Boring Tool Company, St. Louis, Mo., with headquarters at Rochester, N. Y.

William G. Clyde, senior vice-president and general manager of sales of the Carnegie Steel Company, Pittsburgh, Pa., has been elected president. Mr. Clyde was born in Chester, Pa., he attended the public schools of Chester and later entered the Pennsylvania Military College graduating with the class of 1888. He began work as civil engineer with Ryan & McDonald, constructors, of Baltimore, Md., and later became associated with Robert Wetherill & Co., machinists and founders of Chester. Mr. Clyde began his mill training with the Wellman Steel & Iron Company at Thurlow, Pa., as superintendent of the plate mills, subsequently going to the Illinois Steel Company, at South Chicago, where he remained for six years. He was then appointed sales manager for the American Steel Hoop Company at Philadelphia, remaining in that position until this firm was taken over by the Carnegie Steel Company. After serving three years in sales work at the Cleveland office Mr. Clyde was appointed assistant general sales manager of the Carnegie Steel Company, with headquarters at Pittsburgh, and in March, 1918, he was made vice-president and general manager of sales of this company.

The Goodell Pratt Company, Greenfield, Mass., has purchased the portable electric drill business of the A. F. Way Company, Inc., East Hartford, Conn.

The Link-Belt Company, Chicago, has awarded a contract to the H. K. Ferguson Company, Cleveland, O., for a one-story, 120 by 260 ft. addition to its plant.

The Sullivan Machinery Company has moved its Sydney, New South Wales, office from Australasia Chambers, 3 Martin Place, to the Kembla building, Margaret street.

The H. D. Conkey Company, Mendota, Ill., has awarded a contract to the Austin Company, Cleveland, O., for a one-story, 90 by 140 ft. addition to its plant to cost approximately \$50,000.

Page & Ludwick, Chicago, have been appointed representatives in Illinois for the Magnetic Manufacturing Company, Milwaukee, Wis., and the Thomas Flexible Coupling Company, Warren, O.

James A. Galligan has joined the sales department of the Union Railway Equipment Company, Chicago. Mr. Galligan was formerly vice-president of the Mortimer B. Flynn Coal Company of Chicago.

The Premier Staybolt Company, Pittsburgh, Pa., has appointed the American Railway Appliances Company, Borden building, New York, as its eastern representative, effective at

once. The eastern territory includes all railroads tributary to New York.

A merger of the Kokomo Steel & Wire Company and the Keystone Steel & Wire Company, Peoria, Ill., has been ratified by the stockholders. The details of the new organization have not been definitely decided upon.

L. Thomas, for the past twenty-four years resident manager of the General Railway Signal Company at Chicago, has been promoted to assistant sales manager, with headquarters at the main office and works, Rochester, N. Y., effective November 1.

George S. Sangdahl, district sales manager of the Horton Steel Works, Ltd., a subsidiary of the Chicago Bridge & Iron Works, with headquarters at Montreal, Que., has been transferred to the newly opened office of the latter company at 963 Union Trust building, Cleveland, O., as district sales manager. The territory of this office will include Ohio, West Virginia, Kentucky, east of Frankfort, New York, Pennsylvania, and part of Maryland.

The Tennessee Engineering & Sales Company, Knoxville, Tenn., agent of the Roller-Smith Company, New York, has opened a branch office at 493 No. Boulevard, Atlanta, Ga., and all Georgia business will be handled from the Atlanta office. The Roller-Smith Company's New England agent, The Detweiler-Bell Company now has its main office at 101 Milk street, Boston, Mass., and has a branch office at 152 Temple street, New Haven, Conn. **Paul G. Detweiler** and **R. H. McCormick** are located in the Boston office and **F. M. Lord** is in the New Haven office.

A. C. Holden, Pacific Coast manager of the General Railway Signal Company, Rochester, N. Y., has been appointed resident manager of the Chicago office with jurisdiction over the Central and Pacific Coast territories, effective November 1. Mr. Holden was born at Waterloo, Iowa, and is a graduate of the electrical engineering department of the Iowa State College. His first signal experience began in the summer of 1902 with the Hall Signal Company. During portions of 1904 and 1905 he was employed as a laborer by the Taylor Signal Company; as paymaster by the Hall Signal Company, and draftsman in the signal department of the Union Pacific. From June, 1905, to June, 1910, he

was general signal inspector on the Great Northern. During Mr. Holden's connection with the General Railway Signal Company, which began in 1910, he has made a special study of installation and construction work and, as field engineer, he had charge of the company's field office at St. Paul, and later was connected with the Chicago, Montreal, New York and Rochester offices. From June, 1916, to January, 1919, his entire time was devoted to construction work in the eastern district and then to April, 1920, he was general superintendent of construction, with headquarters at Rochester, N. Y. From April, 1920, to March 1, 1924, he served as sales manager of the household appliance division and then as Pacific Coast manager at San Francisco, Cal.

The Yates-American Machine Company has been organized through the consolidation of the P. B. Yates Machine Company, Beloit, Wis., and the American Woodworking Machine Company, Rochester, N. Y. **J. E. McKelvey**, president of the American Woodworking Machine Company, and **P. G. Farrow**, vice-president and general manager, **C. E. McQuiston**, treasurer, and **F. R. Smith**, secretary, of the P. B. Yates Machine



W. G. Clyde



A. C. Holden

Company, will retain their respective positions in the new company. H. A. Von Oven, one of the trustees of the P. B. Yates Machine Company, who has been acting president since the death of P. B. Yates, has resigned.

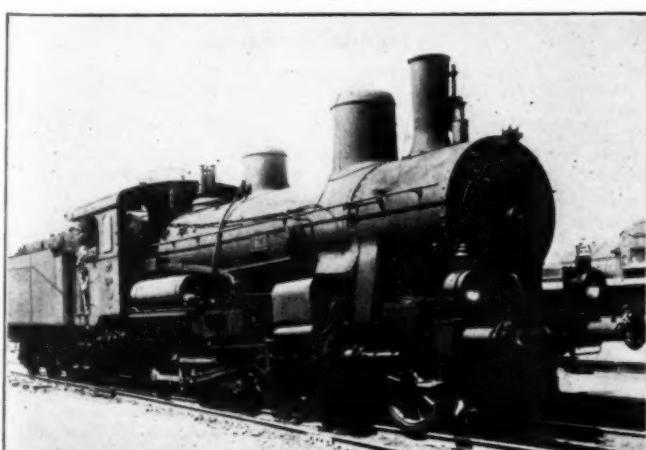
James M. Buick, vice-president of the American Car & Foundry Company, at his own request has been relieved from the management of the sales department, a responsibility assumed six years ago. Mr. Buick, who has been connected with the company in an official capacity since its formation in 1899, will continue as vice-president, with headquarters in New York as heretofore. **Herbert W. Wolff**, who has been a vice-president since February, 1916, in charge of the Chicago district, has been appointed manager of sales, succeeding Mr. Buick, and will be located in New York. Mr. Wolff was born on December 27, 1873, and was educated in the public schools of Detroit, Mich. He began his business career with the Michigan Car Company at Detroit in 1886 and when the Michigan and Peninsular car companies were merged in 1892 under the name of the Michigan Peninsular Car Company, he remained in the service of the consolidated corporation. Mr. Wolff was assistant mechanical engineer of this company in 1899 when the American Car & Foundry Company was formed and went to St. Louis, Mo., to become chief mechanical engineer of the new company. He was appointed assistant to the vice-president, with headquarters at St. Louis in 1912 and since 1916 has been vice-president in charge of the Chicago district.



James M. Buick



H. W. Wolff



Mogul Locomotive, Bavarian Railways

Railway Construction

ATCHISON, TOPEKA & SANTA FE.—Four small buildings will be constructed at the terminal at Bakersfield, Cal., to cost a total of \$28,000. They will include a division foreman's office and a locker room building.

ATLANTIC COAST LINE.—The company has authorized the following statement: "The Atlantic Coast Line Railroad has completed securing the right of way from the end of its Thomasville branch in Georgia to Perry, Fla., a distance of 40 miles, which will open a new through line from Tampa and other west coast Florida cities to the middle and northwest by Albany and Atlanta and, with the Louisville and Nashville, by Montgomery and Chattanooga. The contract for its construction will be let as soon as authority is granted by the Interstate Commerce Commission."

BALTIMORE & OHIO.—A contract has been awarded to Joseph E. Nelson & Sons, Chicago, Ill., for the construction of water treating plants at DeForest Junction, Ohio, and at Athens, to cost approximately \$18,000.

BALTIMORE & OHIO.—A contract placed by this road with the Kelly-Atkinson Construction Company, Chicago, covers the erection of superstructure, concreting and waterproofing of a bridge carrying its tracks over and across those of the Southern Illinois & Kentucky, Greendale, Ill. The new structure is a through plate girder span 36 ft. long. Approximately 60 tons of material is involved. The same railroad has placed a contract with the Bethlehem Steel Company, covering the fabrication and delivery of steel work for the superstructure of its new bridge crossing Killbuck creek, near Wooster, O., involving approximately 30 tons of material.

CHEAPEAKE & OHIO.—A contract for the construction of a coaling station at Olive Hill, Ky., reported in the *Railway Age* of September 26, has been awarded to the T. W. Snow Construction Company, Chicago.

CHICAGO, MILWAUKEE & ST. PAUL.—The Interstate Commerce Commission has authorized this company to construct a 13-mile extension of its Big Black Foot branch in Montana; estimated cost, \$170,935.

GUYANDOT & TUG RIVER.—This company, a subsidiary of the Norfolk & Western, has applied to the Interstate Commerce Commission for a certificate authorizing the construction and operation of a new line from a connection with the Virginian at Elmore, W. Va., to Gilbert and Wharncliffe, W. Va., 53 miles, connecting at the latter point with the Norfolk & Western, which has an application pending for authority to acquire control of the Virginian by lease.

MISSOURI PACIFIC.—A contract has been awarded for the construction of a passenger station at Corning, Ark., to cost \$25,000, as reported in the *Railway Age* of May 23.

NORTHERN PACIFIC.—A coaling station is being constructed at Tacoma, Wash., the contract for the automatic hoisting machinery having been awarded to the Howlett Construction Company, Moline, Ill.

PENNSYLVANIA.—A contract has been awarded to the Vare Construction Company, Philadelphia, for the construction of conduits in connection with telegraph and telephone changes incident to the proposed electrification of the company's lines between West Philadelphia and Wilmington, Del. A contract has been awarded to the Contractors' Machinery & Supply Company, Pittsburgh, for the demolition of the Schoenburger plant of the American Steel & Wire Company at that place in connection with the company's provision of new freight house facilities. A contract has been awarded to the Seaboard Construction Company, Philadelphia, for the erection of a superstructure for a jump-over bridge at Louisville, O.

UNION PACIFIC.—The city of Denver, Colo., and the railway will jointly construct a subway at Thirty-eighth street in Denver.

Railway Financial News

BLOOMSBURG & SOUTHERN.—*Abandonment.*—This company has applied to the Interstate Commerce Commission for permission to abandon its line between Benton, Pa., and Jamison City, 9 miles. The applicant stated that there is not enough business to maintain that part of the line.

BOSTON & MAINE.—*Progress of Reorganization Plan.*—The Boston & Maine Railroad has filed with the Public Utilities Commission of Massachusetts a petition seeking approval of the details of the railroad's reorganization plan. The commission has set November 17 for a public hearing. The general readjustment committee has announced that the New York, New Haven & Hartford has deposited its holdings of Boston & Maine stock under the provisions of the plan. The New Haven has arranged also to subscribe for its full quota of the new 7 per cent prior preference stock to be issued by the Boston & Maine under the reorganization. The New Haven subscription will amount to \$4,500,000, or slightly more than one-third of the \$13,000,000 prior preference stock offered.

CHICAGO, MILWAUKEE & ST. PAUL.—*Court Considers Petition to Intervene in Reorganization.*—Federal Judge James H. Wilkerson at Chicago has taken under advisement the motion of the minority group of stockholders represented by Attorney Lessing Rosenthal to intervene in the forthcoming reorganization of the Chicago, Milwaukee & St. Paul. The plan for the reorganization advanced by Kuhn, Loeb & Co., and the National City Company, and that of Roosevelt & Son, were both attacked by the minority stockholders' attorney. The plan of the minority stockholders is to postpone the adoption of any reorganization plan until the report of the Interstate Commerce Commission on the investigation it is now making into the affairs of the St. Paul, has been completed and published.

DENVER & RIO GRANDE WESTERN.—*Abandonment.*—The Interstate Commerce Commission has authorized this company to abandon mileage from a point at or near Capers, Col., to Graneros, 2.74 miles, and from Larimer to Lascar, 5 miles. This mileage was formerly a part of a narrow gage main line from Pueblo to Trinidad, which line was rebuilt as standard gage in 1890, and has not been used as a main line since completion in 1911 of the present double track main line from Southern Junction near Pueblo to Walsenburg Junction.

DETROIT, CARO & SANDUSKY.—*Securities.*—The Interstate Commerce Commission has granted authority to this company to issue \$50,000 common stock and \$100,000 first mortgage 6 per cent bonds, in connection with its acquisition of a line from Caro, Mich., to Roseburg, 50 miles, formerly a part of the Detroit, Bay City & Western. Approval of the operation of this line by the Detroit, Caro & Sandusky was reported in the *Railway Age* of October 10.

GULF & INTERSTATE RAILWAY OF TEXAS.—*Acquisition.* This company, a subsidiary of the Santa Fe, has been authorized by the Interstate Commerce Commission to take over the Santa Fe Dock & Channel Co., which owns terminal facilities at Port Bolivar, Tex. The Gulf & Interstate at present owns all the stock of the Dock Company and states that the maintenance of the latter as a separate corporation is no longer necessary.

LONGVIEW, PORTLAND & NORTHERN.—*Securities.* The Interstate Commerce Commission has granted authority for the issuance of \$1,250,000 common stock and \$3,250,000 first mortgage 6 per cent bonds, these securities to be delivered to the Long-Bell Lumber Company for reimbursement of advances made for capital purposes.

MINNEAPOLIS & ST. LOUIS.—*Receiver's Certificates.*—The receiver of this company has been authorized by the Interstate Commerce Commission to issue \$400,000 6 per cent certificates to refund certificates in like amount maturing on October 30 and November 5.

MINNEAPOLIS, ST. PAUL & SAULT STE. MARIE.—*Bonds Sold.*—Dillon, Read & Co. and the National City Company have sold

\$8,136,000 first consolidated 5 per cent bonds at 99½ and interest to yield over 5 per cent. The issue is guaranteed as to interest by the Canadian Pacific. The bonds are to retire at maturity \$8,136,000 Minneapolis, Sault Ste. Marie & Atlantic first 4s due January 1, 1926, upon the retirement of which the first consolidated mortgage gold bonds will be secured by a closed direct first mortgage lien on all the lines of railway of the Minneapolis, St. Paul & Sault Ste. Marie, including 3,298 miles of road, together with terminals and appurtenant lands and buildings. Bonds under this mortgage will then be outstanding in the amount of \$71,147,000, of which \$56,863,000 are 4s, and \$14,284,000 (including this issue) will be 5s.

PITTSBURGH & WEST VIRGINIA.—*Change in Capitalization Proposed.* The directors have voted to give the stockholders of the company the privilege of exchanging half their common stock for 6 per cent cumulative stock on a share for share basis and to reduce the par value of the common to \$50 a share. An owner of a share of common stock who exercises this exchange privilege will receive one-half share of 6 per cent cumulative preferred stock of a value of \$100 par value and a share of common stock of \$50 par value. A meeting of the stockholders has been called for January 11, 1926, to vote on the proposal. It is desired to make the plan effective February 1, 1926.

POTATO CREEK.—*Abandonment of Line.*—The Interstate Commerce Commission has granted a certificate authorizing this company to abandon that portion of its line from Norwich to Betula, a distance of 9,500 ft., all in McKean County, Pa.

ROANOKE.—*Abandonment.*—This company has applied to the Interstate Commerce Commission for authority to abandon its line from Horners, Va., to Thelma, N. C.

SEABOARD.—*Bonds.*—This company has been authorized by the Interstate Commerce Commission to sell \$10,000,000 of first and consolidated mortgage 6 per cent gold bonds at not less than 92½ per cent of par and accrued interest to a syndicate formed by Dillon, Read & Co. and Ladenburg, Thalmann & Co. The proceeds will be used to reimburse the company's treasury for capital expenditures, pay off short term bank loans aggregating \$3,500,000 and finance construction of 22½ miles of main line connecting Brooksville, Fla., and Inverness. The bonds in question were sold to the public in September.

ST. LOUIS SOUTHWESTERN.—*New Directors.*—L. F. Loree, chairman of the board of the Kansas City Southern; Paul Rosenthal of Ladenburg, Thalmann & Co., and E. Roland Harriman have been elected directors succeeding J. E. Gorman, president of the Rock Island; M. L. Bell, vice-president and general counsel of the Rock Island and Nathan L. Amster. These changes follow the sale by the Rock Island to the Kansas City Southern of the former's holdings of St. Louis Southwestern common and preferred stock.

TOLEDO, ANGOLA & WESTERN.—*Securities.*—This company was authorized by the Interstate Commerce Commission to issue 3,000 shares of no-par-value common stock and \$300,000 first mortgage 6 per cent bonds.

TOLEDO, PEORIA & WESTERN.—*Sale.*—The sale of the Toledo, Peoria & Western, which was to have taken place at Peoria, Ill., on October 28, was postponed until December 9.

Dividends Declared

Cleveland & Pittsburgh.—Special guaranteed, \$0.50, quarterly; regular guaranteed \$0.87½ quarterly, both payable December 1 to holders of record November 10.

Illinois Central.—Common, 1¼ per cent, quarterly, payable December 1 to holders of record November 6.

Maine Central.—Preferred, 1¼ per cent, quarterly; preferred (account of accumulated dividends), 2½ per cent, both payable December 1 to holders of record November 16.

Norfolk & Western.—Common, 1¼ per cent, quarterly; common, 1 per cent extra, both payable December 19 to holders of record November 30.

Ontario & Quebec.—Common, 3 per cent; debenture stock, 2½ per cent, both payable December 1 to holders of record November 3.

Pennsylvania.—75c, quarterly, payable November 30 to holders of record November 2.

Trend of Railway Stock and Bond Prices

	Nov. 4	Last Week	Last Year
Average price of 20 representative railway stocks	90.45	89.06	72.43
Average price of 20 representative railway bonds	91.63	91.71	88.50

Railway Officers

Executive

Van S. Jodon has been elected president and general manager of the Bellefonte Central, succeeding F. H. Thomas, resigned. **Thomas R. Osbourn** has been elected vice-president, succeeding Mr. Jodon.

A. W. Trenholm, vice-president of the Chicago, St. Paul, Minneapolis & Omaha, with headquarters at St. Paul, Minn., has retired after 45 years of service with the Omaha. **Frank R. Pechin**, recently appointed general manager, will have charge of the operation and maintenance of the road reporting to the president. **Charles Jensch**, controller, in addition to having charge of the accounting department, will be responsible for the administration of the land and tax departments and such other executive duties as may be assigned to him by the president.

Financial, Legal and Accounting

Sylvester S. Bliss has been appointed assistant treasurer of the New York Central at New York City. Mr. Bliss entered railway service on July 15, 1887, with the New York Central & Hudson River, now the New York Central, as a clerk in the paymaster's office. After two years in that office, he was transferred to the cashier's office. He was transferred to the treasurer's office in 1902.

A. E. Shave has been appointed assistant treasurer of the Canadian Pacific with headquarters at Montreal. Mr. Shave has been in the employ of the railway since August 18, 1908, when he was appointed clerk in the office of the treasurer. He became assistant chief clerk in that office in June, 1915, and was promoted chief clerk in January, 1919. From this position he now is raised to the position of assistant treasurer.

Operating

J. B. Hamilton has been appointed acting trainmaster on the Illinois Central at 12th street, Chicago, succeeding **C. L. Beals**, who has been granted a leave of absence.

E. A. Hibbett has been appointed superintendent of the Atlanta division of the Nashville, Chattanooga & St. Louis, succeeding **J. A. Baldwin**, retired. The position of assistant superintendent has been abolished.

Lloyd Crocker has been appointed trainmaster of the Wilmington district of the Atlantic Coast Line, with headquarters at Wilmington, N. C., succeeding **M. L. Stover**, who has been assigned to other duties on account of ill health. **C. G. Grigg** has been appointed trainmaster of the Norfolk district, with headquarters at Tarboro, N. C.

C. G. Sibley has been appointed superintendent of transportation of the second division of the Atlantic Coast Line, with headquarters at Savannah, Ga., succeeding **E. R. Wootten**, who has been assigned to other duties on account of ill health. **G. B. McClellan** has been appointed superintendent at Rocky Mount, N. C., succeeding Mr. Sibley. **R. G. Murchison** has been appointed trainmaster at Rocky Mount, N. C., succeeding Mr. McClellan, and **H. A. Blankenship** has been appointed trainmaster at Pinners Point, Va., succeeding Mr. Murchison, transferred.

S. L. Landis, master mechanic of the Central Kansas division of the Missouri Pacific, with headquarters at Osawatomie, Kan., has been promoted to superintendent of fuel conservation, with headquarters at St. Louis, Mo., succeeding **T. F. Carbery**, who has been assigned to other duties. **W. R. Sugg** has been appointed assistant superintendent of fuel conservation, with headquarters at St. Louis, succeeding **K. C. Spatz**, who also has been assigned to other duties. **M. McKernan**,

superintendent of safety, with headquarters at St. Louis, has been appointed inspector of transportation, with the same headquarters. **C. F. Larson** has been appointed superintendent of safety, with headquarters at St. Louis, in place of Mr. McKernan.

Lewis K. Marr, whose appointment as acting superintendent of the New York division of the Pennsylvania was announced in the *Railway Age* of October 17, was born in Philadelphia,

Pa., on September 2, 1869, and was educated in the public schools. He entered railway service at the age of eighteen as a telegraph operator on the Renovo division of the Pennsylvania, and after serving in this position for four years, he resigned but returned again to the Philadelphia division as a telegraph operator on March 13, 1893. On August 6, 1894, he became leverman on the Philadelphia Terminal division, and two years later he was promoted to assistant to the dispatcher of the same division. He was ad-

vanced to assistant to the train director on February 1, 1902, and on March 1, 1904, became train director of the Philadelphia Terminal division. This position he held until December 1, 1909, when he was appointed yardmaster. On January 20, 1910, he was transferred to New York in the capacity of general yardmaster in charge of passenger movements in and out of the New York improvement and tunnel extension, and on November 8, 1911, Mr. Marr was appointed passenger trainmaster of the New York division, which position he held until May 1, 1916, when he was promoted to terminal passenger trainmaster in New York. He was advanced to assistant superintendent of the Philadelphia Terminal division on September 16, 1918, and to assistant superintendent of the New York division on March 1, 1920, which position he was holding when he was appointed acting superintendent of the same division. Mr. Marr is acting as superintendent in place of **F. D. Davis** who is acting for **W. B. Wood**, general superintendent, who was seriously injured in an automobile accident in September.

A. J. Chester, who has been appointed superintendent of transportation of the Texas & Pacific, with headquarters at Dallas, Tex., was born on January 1, 1880, at Jackson, Tenn., and entered railway service in 1897 as a clerk in the freight office of the Mobile & Ohio at Jackson, Tenn. He was later employed as a clerk, cashier and ticket seller on the Nashville, Chattanooga & St. Louis, where he remained until April, 1903, when he was employed as a clerk on the Illinois Central. Mr. Chester was appointed chief clerk and agent on the Mobile & Ohio in July, 1903, which position he held until August, 1914, when he was promoted to traveling freight agent and commercial agent. He entered the service of the Texas & Pacific in October, 1917, as agent at Fort Worth, Tex., and was promoted to service supervisor in May, 1919. He was promoted to general agent in March, 1920, and in October of that year was promoted to superintendent of car service. He continued in that capacity until his recent promotion to superintendent of transportation.

Traffic

C. C. Fulp has been appointed district passenger agent of the Southern, with headquarters at Baltimore, Md., succeeding **L. H. Burgess**, who has resigned.

J. W. Switzer has been appointed general passenger agent for the Michigan Central, succeeding **C. C. Clark**, deceased.



L. K. Marr

A. V. Ulrich has been appointed assistant general passenger agent, with headquarters at Detroit, Mich. **Bernard Paeth** has been appointed general agent, passenger department, with the same headquarters.

Harry O. Hartzell, for the last five years manager of the commercial development department of the Baltimore & Ohio, at Baltimore, has become executive assistant to the vice-president in charge of traffic and commercial development, effective November 1. In his new position Mr. Hartzell will continue to direct the affairs of the commercial development department, as well as such other matters as may be assigned him. Mr. Hartzell was born in Baltimore on August 11, 1875. He was educated in the public schools and City College, later taking a business course. His first railroad experience was with the Western Maryland shortly after leaving school. Mr. Hartzell started with

the Baltimore & Ohio in 1896 as secretary to the assistant general freight agent, at Baltimore, becoming contracting freight agent on September 1, 1898, and traveling freight agent May 1, 1905. On February 1, 1907, he was appointed assistant chief clerk in the general freight department, at Baltimore, and industrial agent, at Pittsburgh, November 1, 1910, becoming assistant general industrial agent, at Baltimore, October 1, 1912, and chief of the industrial bureau in September, 1918. During the same year he became agricultural and industrial agent and was advanced to manager of the commercial development department March 1, 1920, when the various departments of the company was reorganized following return of the property after Federal control.

John B. Nessle, freight traffic manager of the Pittsburgh & Lake Erie, has been promoted to traffic manager in charge of both freight and passenger service. Mr. Nessle was born on June 20, 1870, at Woodworth, Ohio, and was educated in the public schools. He entered railway service in December, 1886, and until April 1, 1887, was a telegraph operator on the Pittsburgh & Lake Erie at Shannopin, Pa. From April 1, 1887, to April 21, 1888, he was telegraph operator and clerk at Struther's, Ohio, and from the latter date until April 17, 1889, he was telegraph operator and clerk at Lowellville, Ohio. In April, 1889, he became a agent at Struther's, Ohio, and on February 2, 1892, car tracer at Pittsburgh, Pa. He became freight agent at McKeesport, Pa., on December 26, 1900, and commercial agent at Brownsville, Pa., on January 15, 1904, which position he held until February 1, 1906, when he became general agent at Pittsburgh, Pa. From October 1, 1907, to January 1, 1910, he was assistant general freight agent at the same place, and from January 1, 1910, to September 1, 1911, he was general freight agent. All this service was with the Pittsburgh & Lake Erie. On Sep-



Harry O. Hartzell



John B. Nessle

tember 1, 1911, he became general coal and ore agent for the New York Central lines at Pittsburgh, and on March 1, 1914, general freight agent for the Pittsburgh & Lake Erie, at Pittsburgh. On March 1, 1920, he became freight traffic manager for the same road at the same place, which position he was holding at the time of his recent promotion. The position of freight traffic manager has been abolished.

Mechanical

W. P. Kershner has been appointed master mechanic of the Central Kansas division of the Missouri Pacific, with headquarters at Osawatomie, Kan., succeeding S. L. Landis, promoted.

F. R. Butts, assistant master mechanic of the Brookfield division of the Chicago, Burlington & Quincy, with headquarters at Hannibal, Mo., has been promoted to master mechanic of the Brookfield division, with headquarters at Brookfield, Mo., succeeding H. H. Urbach, transferred.

James Paul has been appointed assistant superintendent of motive power of the Atlantic Coast Line, with headquarters at the Uceta shops, Tampa, Fla., in charge of mechanical forces on the third division, and reporting to the superintendent of motive power, at Waycross, Ga. **W. R. Witherspoon** has been appointed master mechanic, with headquarters at High Springs, Fla., succeeding Mr. Paul.

C. L. Gibson has been appointed master mechanic of the Portland division of the Southern Pacific, with headquarters at the Brooklyn shops, Portland, Ore., succeeding D. M. McLaughlin, who has retired. **H. J. McCracken**, assistant master mechanic of the Western division, with headquarters at West Oakland, Cal., has been promoted to master mechanic of the Stockton division, with headquarters at Tracy, Cal., succeeding Mr. Gibson. **A. B. Wilson** has been appointed assistant master mechanic of the Western division, with headquarters at West Oakland, Cal., in place of Mr. McCracken.

Purchasing and Stores

J. H. Smith has been appointed division storekeeper of the Southern, with headquarters at Atlanta, Ga., succeeding G. A. Blackwell, deceased.

Obituary

L. F. Jones, general agent, passenger department, of the New York Central, with headquarters at Seattle, Wash., died in that city on October 28, after a long illness.

J. C. Emig, assistant general freight agent of the Cleveland, Cincinnati, Chicago & St. Louis, with headquarters at Cincinnati, O., died suddenly in Chicago on October 29.

Edwin W. Warner, general freight agent of the Canadian National at Winnipeg, died in that city on October 31, after a few days' illness. Mr. Warner was born in Watertown, N. Y., 70 years ago.

H. O. Fairchild, general solicitor of the Green Bay & Western, died on October 14 at his home in Green Bay, Wis. Mr. Fairchild was born on August 14, 1845, at Newton, Fountain county, Ind., and was educated in the public schools of Wabash, Ind., and later graduated from Wabash College. For the past 30 years Mr. Fairchild has been general solicitor of the Green Bay & Western in addition to being senior member of the law firm of Fairchild, North, Parker & Bie, Green Bay.

John D. Bourne, formerly superintendent of the Berkshire division of the Boston & Maine, died at his home at Waterboro, Me., on October 27 following a long illness. Mr. Bourne was born on August 13, 1879, at Kennebunkport, Me., and entered railroad service in 1897. He served in various capacities in the operating department and in 1917 he became superintendent of the Berkshire division of the Boston & Maine. He retired from service a few months ago on account of ill health.